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Annual Report 1981/82

June 1982

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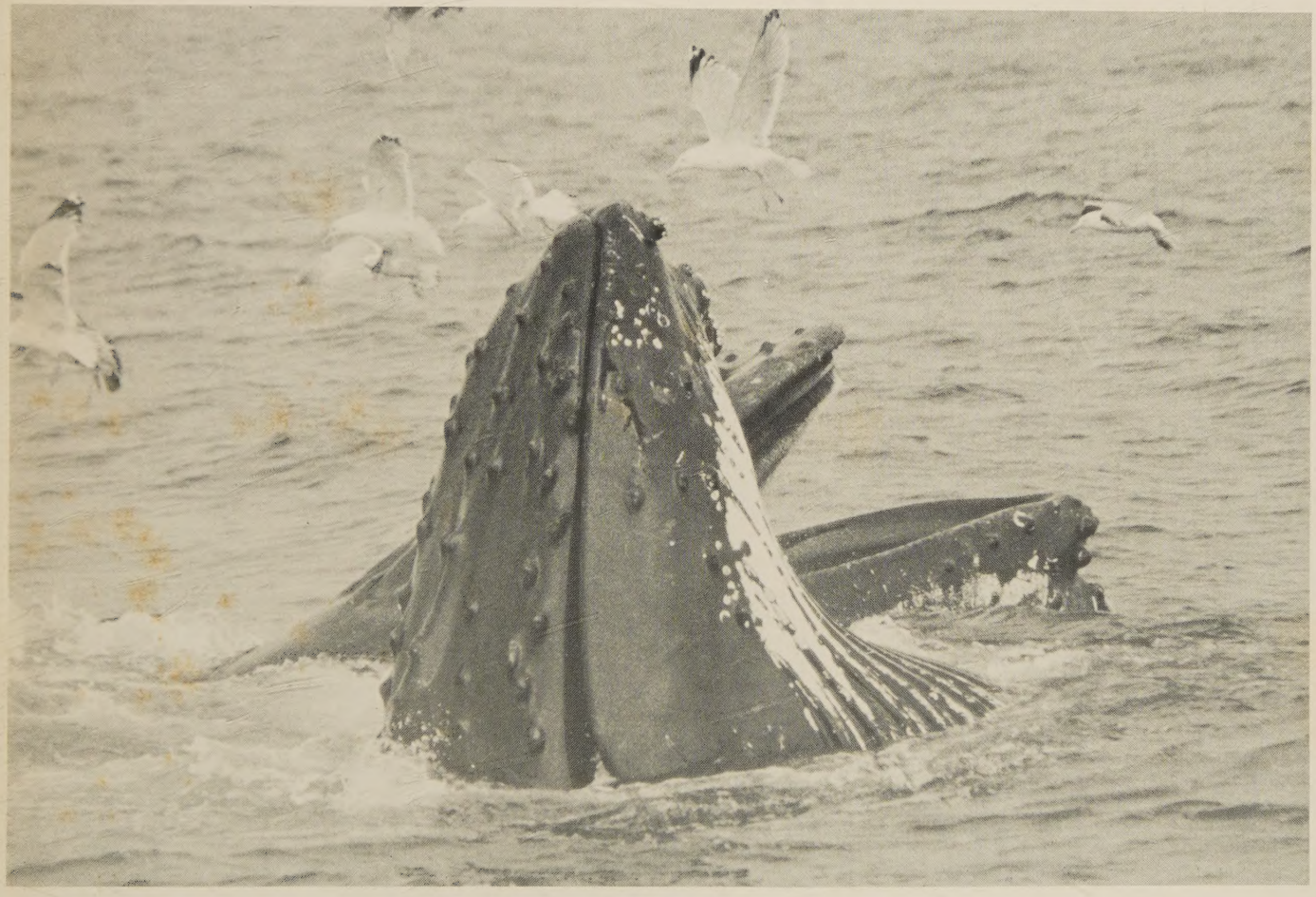

U. S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service

Feeding humpback whales on Stellwagen Bank off Gloucester, Massachusetts lunge through schools of sand lance. Photograph by Mason Weinrich of the Cetacean Research Unit, Gloucester Fishermen's Museum.

Marine Mammal Protection Act of 1972 Annual Report

April 1, 1981, to March 31, 1982

U.S. DEPARTMENT OF COMMERCE
Malcolm Baldrige, Secretary

National Oceanic and Atmospheric Administration
John V. Byrne, Administrator

National Marine Fisheries Service
William G. Gordon, Assistant Administrator for Fisheries

THE SECRETARY OF COMMERCE
Washington, D.C. 20230

MAY 14 1982

President of the Senate
Speaker of the House of Representatives

Dear Sirs:

I am pleased to submit the Annual Report of the Department of Commerce concerning administration of the Marine Mammal Protection Act of 1972 for the period of April 1, 1981 through March 31, 1982, as required by Section 103(f) of the Act.

The Department of Commerce is responsible for implementing the Act with respect to whales and porpoises of the order Cetecea and seals and sea lions of the suborder Pinnipedia. The report details the activities of the Department concerning these marine mammals.

Sincerely,

Malcolm Baldrige

Secretary of Commerce

Enclosure

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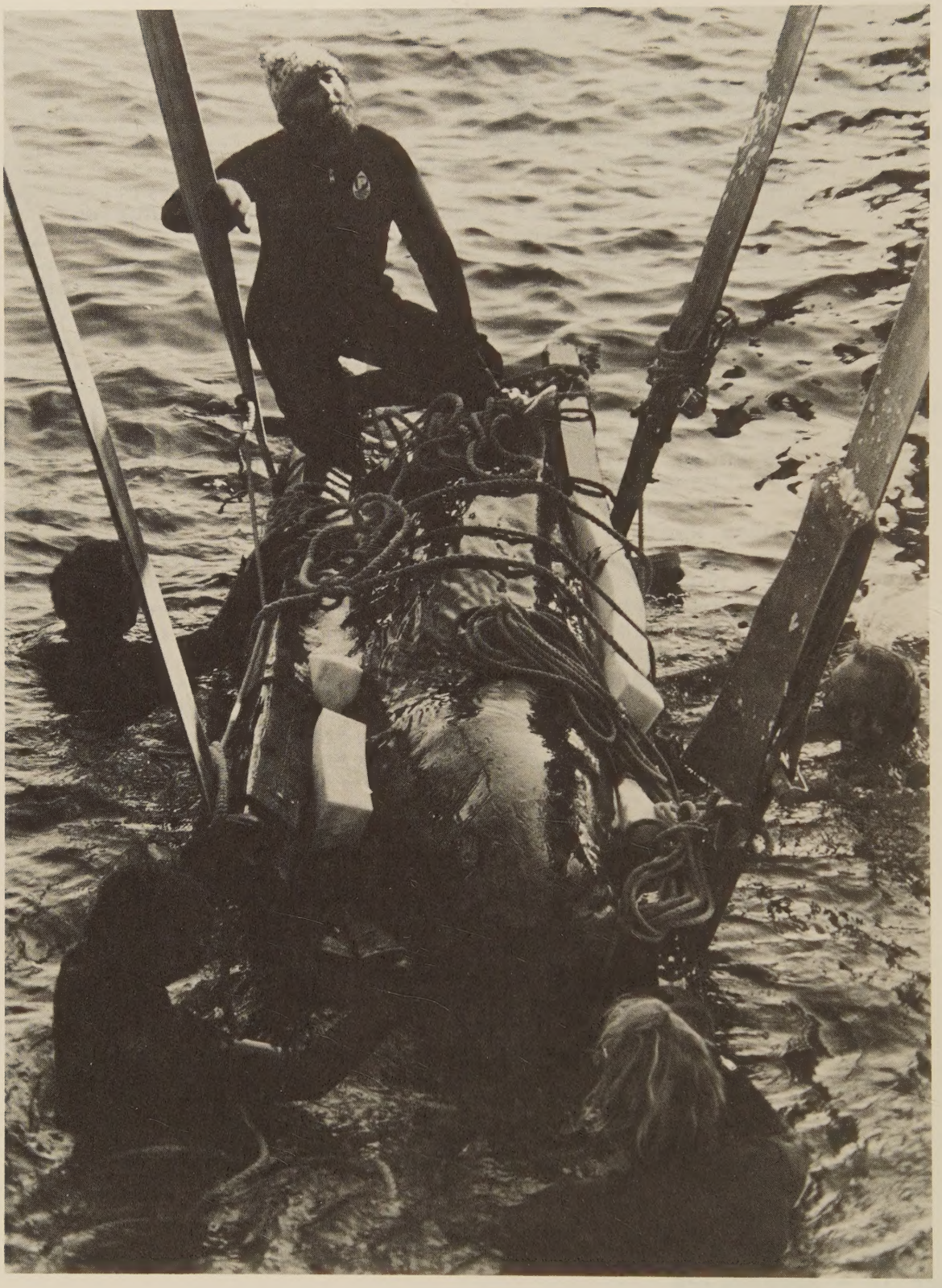

Figure 1 - Efforts to recover and rehabilitate a stranded young sperm whale off the Coast of Maine. Photograph by Scott Kraus, New England Aquarium, Boston, Mass.

INTRODUCTION

Passage of the Marine Mammal Protection Act (the Act or MMPA) in 1972 committed the United States to continuing long-term management and research programs that would conserve and protect these animals. Although there are a few exceptions, the Act placed a moratorium on taking or importing marine mammals or their products into the United States. In addition, persons subject to U.S. jurisdiction on the high seas are included in the moratorium. In 1976, U.S. control of marine mammals was expanded by the Magnuson Fishery Conservation and Management Act (MFCMA) to include the 200 mile fishery conservation zone (FCZ).

The Act delegated authority and responsibility for oceanic marine mammals to the Secretary of the Agency where the National Oceanic and Atmospheric Administration (NOAA) operates. Under NOAA, the National Marine Fisheries Service (NMFS) is responsible for species of the order Cetacea, whales and dolphins, and the Order Carnivora, suborder Pinnipedia, seals and sea lions, except walruses. The Department of the Interior is responsible for dugongs, manatees, polar bears, sea otters, and walruses.

The moratorium does not apply to every marine mammal species. Those already managed under international agreements, such as the northern fur seal, are exempt as long as the agreements further the purposes of the Act. Also, under a permit system, marine mammals may be taken for scientific research, public display, and incidental to commercial fishing. The 1981 amendments to the Act add two categories of "small take" to the moratorium exception. Further, certain natives of Alaska may take marine mammals for subsistence use and production of handicrafts. Although the Act made management of marine mammals a Federal government responsibility, it provides for the return of management to the States.

Functions of the NMFS include granting or denying requests for exemptions, issuing permits, carrying out research and management programs, enforcing the Act, participating in international programs, and issuing rules and regulations. To carry out its mission to conserve and protect marine mammals, NMFS cooperates with the States, conservation organizations, the public, other Federal agencies and many constituent groups including scientific researchers, the public display community, and the Marine Mammal Commission.

NMFS's marine mammal research programs are the responsibility of the Southwest Fisheries Center, La Jolla, Calif.; the Southeast Fisheries Center, Miami, Fla.; the Northeast Fisheries Center, Woods Hole, Mass.; and the National Marine Mammal Laboratory (NMML), Northwest and Alaska Fisheries Center,

Seattle, Wash. Management programs are carried out at NMFS regional offices in Gloucester, Mass.; St. Petersburg, Fla.; Seattle, Wash.; Terminal Island, Calif.; and Juneau, Alaska.

This annual report to Congress is available from the Office of Marine Mammals and Endangered Species, NMFS, Washington, D.C. 20235.

Summary

The Marine Mammal Protection Act has been in effect for almost a decade. Although many issues remain, progress has been made in solving problems addressed by the Act. Progress made in reducing the numbers of porpoises killed during purse seining for yellowfin tuna (over 350,000 in 1972, but below 20,000 from 1978 through 1981) was reflected in the 1981 amendments to the Act. In the original Act, one of the immediate goals was to reduce the numbers of porpoises killed to a level approaching zero. The new amendments clarify the zero mortality goal so that it can be satisfied by the tuna industry's continued use of the best marine mammal safety techniques and equipment that are economically and technologically practicable.

Another successful program administered by NMFS is a permit system for taking marine mammals incidental to commercial fishing and taking or importing marine mammals for scientific research or public display. Not only must NMFS decide in a timely manner whether to issue a permit, it must also monitor all currently valid permits which numbered 269 during this year.

Because most marine mammals are highly migratory, we have international agreements to protect them. The United States actively participates in organizations such as the International Whaling Commission (IWC). The United States has pressed for a moratorium on commercial whaling in the IWC since 1972. That year, the total catch limit was about 46,000 whales; this year, it is down to 14,070. We will continue to support the lowest catch limits possible and will call for strict conformity with IWC regulations by all whaling countries. The IWC also sets quotas on the number of bowhead whales that can be taken for subsistence by Alaska natives. Another success is a cooperative agreement between NMFS and the Alaska Eskimo Whaling Commission (AEWC) which provides for cooperative management of the hunts from 1981 through 1983.

In 1972, the Act noted that for many marine mammals, there was not enough information to protect or wisely manage their populations. Therefore, NMFS has directed its research programs toward a better understanding of all marine mammal populations under its jurisdiction. Although not complete, our basic knowledge of these animals has increased. NMFS has assessed the numbers of many populations and has obtained additional data on

such basic life history aspects as how often and when and where these animals give birth, their weight at birth, as sub-adults, and adults, how long they live, what they eat, who are their predators, and what affects their habitat. Tables in the appendix reflect our current knowledge of population numbers, and the Status of Stocks Section (1980/81 Annual Report) includes biological data.

Although NMFS is the lead Federal government agency on many marine mammal projects, other agencies also are involved in marine mammal research. These agencies are usually involved because activities which they authorize affect marine mammals. This is the case of the Bureau of Land Management (BLM) which has responsibility under the Outer Continental Shelf (OCS) Lands Act for predicting, detecting and mitigating, the adverse effects of OCS oil and gas development. NMFS, along with the U.S. Fish and Wildlife Service, is responsible under the MMPA and the Endangered Species Act (ESA) for reviewing proposed actions and advising the BLM of the measures that may be needed to assure that the proposed actions will not be to the disadvantage of marine mammals and other wildlife.

One of the long-standing problems addressed by the 1981 amendments was the issue of the return of management of marine mammals to the States. For example, the State of Alaska tried to regain its management for six years under the original Act and did not succeed. Under the new amendments, NMFS has proposed regulations concerning return of management and is working with the State of Alaska to facilitate this action.

Following in this report is a discussion of the 1981 amendments and actions taken by NMFS from April 1, 1981 through March 31, 1982 to administer the requirements of the Act.

PART I
1981 Amendments to the
Marine Mammal Protection Act

Last fall, for the first time since passage of the Marine Mammal Protection Act of 1972, substantial changes were made to the Act to improve its operation. The amendments, which became effective October 9, 1981, covered

- o tuna/porpoise and zero mortality
- o return of management to states
- o small take of marine mammals
- o beached and stranded animals
- o marking and tagging
- o changes in definitions
- o reauthorization

Tuna/Porpoise and Immediate Goal of Zero Mortality

The amendments restated the "immediate goal" test in the case of yellowfin tuna fishermen to require "the incidental kill or incidental serious injury of marine mammals...be reduced to insignificant levels approaching a zero mortality and serious injury rate; provided that this goal shall be satisfied...by a continuation of the application of the best marine mammal safety techniques and equipment that are economically and technologically practicable."

This restatement clarifies the view that Congress intends the industry to apply the "best economically and technologically practicable marine mammal safety techniques" and recognizes the progress of the industry in saving porpoises. The House of Representatives Report notes that the change will not affect the Secretary's authority to issue regulations, to set quotas, or to fulfill other obligations under the MMPA.

Return of Management to States

The amendments adopt a new approach to returning management authority to States. Congress found the previous approach involving Federal Administrative Law Judge (ALJ) hearings, and National Environmental Policy Act procedures to be unworkable. Alaska, for example, tried for nine years to regain its management authority and never succeeded. The new approach creates a system that Congress felt was more likely to achieve the timely return of marine mammal management authority to States. This approach contains four distinct phases:

1. State Request

The State must request return of management from the Secretary of the appropriate Federal agency. The Secretary must find, after notice and opportunity for public comment, that the State has developed and will implement a program for the conservation and management of the species requested that is consistent with the MMPA and international treaty obligations, and requires humane taking. The program cannot permit taking unless the State has determined that the species is at its optimum sustainable population (OSP) level and has specified the maximum number of animals of that species that may be taken without reducing the species below OSP. These determinations must be final, implemented under state law, and, if required, a cooperative allocation agreement with the appropriate Federal agencies must be implemented.

The program cannot permit taking that exceeds the maximum number allowed and, in the case of subsistence uses, cannot permit taking of a number of animals that would be inconsistent with maintaining the species at OSP. Also, it cannot permit the taking of the species for scientific research and public display purposes, except for taking by, or for, the State. The program must provide procedures for acquiring and evaluating data relating to OSP and the maximum take which could be allowed and, if required, for amending these determinations, provide procedures for resolving differences between the State and the Secretary that may arise during the development of a cooperative agreement, and provide for the submission of an annual report to the Secretary regarding the administration of the program.

The amendments make additional, important changes for the State of Alaska and Alaska natives. First, the Secretary cannot transfer management authority unless Alaska has adopted and will implement a statute and regulations that ensures that the taking of marine mammals for subsistence uses is accomplished in a non-wasteful manner; that subsistence take will be the priority consumptive use of the species; and if subsistence taking must be restricted, that such restriction will be based on the customary and direct dependence upon the species as the mainstay of livelihood, local residency, and the availability of alternative resources.

In addition, the Secretary must find that the State has adopted a statute or regulation that allows non-subsistence uses of marine mammals only if the State finds that these uses will not have a significant adverse impact upon subsistence uses and that implementing regulations to the maximum extent practicable, provide economic opportunities for the residents of rural coastal villages of Alaska who engage in subsistence uses of that species.

The amendments specifically overrule the decision in People of Togiak v. U.S. which held that Alaskan natives cannot be

regulated by a State on return of management by the Federal government. The amendments revise the native exemption to permit State regulation of natives if the procedures outlined in the amendments are followed.

2. State OSP Hearing

After the agency notices the State request for a return of management authority, allows an opportunity for public comment, and makes the appropriate findings, the State must proceed to the second phase of determining the OSP of the marine mammals it wants to manage. Until the State undertakes a hearing and administrative process to make these determinations, the appropriate Federal agency continues to manage the moratorium on all takings and imports in the State and determines which takings may be permitted.

3. State Management Authority

The third phase involves the State assuming management authority which takes effect after the State's determinations are final and implemented under State law and after a cooperative agreement between the State and the Federal agencies is implemented. Then the legal responsibility for management passes from the Federal government to the State. State implementation of its management authority is permanent; it cannot be curtailed unless one of the Federal agencies successfully prosecutes a revocation or the State voluntarily returns its authority to the Federal government.

4. Federal Revocation or a State's Voluntary Return

The final phase involves potential Federal revocation of the management authority previously returned to a State or the State's voluntary return of management. The grounds for revocation are that the State program is not being implemented or is being implemented in a fashion inconsistent with the Act or the State program. The Secretary may not revoke any management transfer without first providing a written notice of intent to revoke and a statement of reasons for the notice and allowing the State 90 days to implement necessary remedial measures. When a revocation by the Secretary becomes final, or if a State voluntarily returns management authority, the Secretary regulates the taking of a species or stock within the State according to the MMPA.

Small Take of Marine Mammals

The amendments attempt to solve another problem under the MMPA; the unintentional taking of small numbers of animals when the taking does not qualify for one of the exceptions to the general moratorium on all takings (and imports) or a permit applicant faces a cumbersome administrative process. The new amendment alleviates the permit, hearing, and MMPA regulatory

scheme for small takes by commercial fishermen or other specified activities in specified geographical areas. Neither of the new exceptions requires a permit, although for specified activities, NMFS will have to develop regulations and other means to administer these exceptions.

During any five-year period, the Secretary shall allow the incidental, but not the intentional, taking by commercial fishermen of small numbers of marine mammals. Before allowing such a take, the Secretary, after notice and opportunity for public comment, must find that the total of such taking will have a negligible impact on the species and must provide guidelines pertaining to the establishment of a cooperative system for monitoring the take. A finding of negligible impact cannot be made if the species is depleted. The Secretary is directed to withdraw or suspend the permission to take marine mammals for a "time certain" under this provision if it is found, after notice and opportunity for public comment, that the taking is having more than a negligible impact on the species or that the purposes, policies, and goals, of the MMPA would be better served by applying the regular MMPA permit procedures.

Also, the Secretary shall allow, upon request by United States citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region, the incidental, but not the intentional, taking of small numbers of marine mammals. This permission may be granted for a period of 5 years or less. Such taking may be allowed only if the species involved is not depleted and if the Secretary, after notice and opportunity for public comment, finds that the total taking will have a negligible impact on the species and its habitat, and on the availability of the species for subsistence uses; prescribes regulations setting forth permissible methods of taking and other means of effecting the least practicable adverse impact on the species and its habitat, paying particular attention to rookeries, mating grounds, and other areas of similar significance; and prescribes regulations pertaining to the monitoring and reporting of such taking. The Secretary is directed to withdraw or suspend the permission to take marine mammals under this provision for a "time certain" if it is found after notice and opportunity for public comment, that the regulations regarding methods of taking, monitoring, or reporting are not being substantially complied with, or the taking is having, or may have, more than a negligible impact on the species. Permission to take in specified activities may be suspended without notice or public comment if the Secretary determines that an emergency exists which poses a significant risk to the species concerned. No emergency suspension pertains to small takes by commercial fishermen.

The House Report notes that the intent is to make these two new exceptions available to persons whose taking of marine mammals is infrequent, unavoidable, or accidental. "Small numbers" is left undefined by the Act. The Report notes that

"negligible" is intended to mean an impact which is able to be disregarded. Yet, the two exceptions differ. The fishermen's exception only allows the establishment of agency guidelines for cooperative monitoring by fishermen while the special activity exception allows for agency regulations of reporting and monitoring.

Beached and Stranded Animals

This amendment replaces a section of the Act which allowed state and local officials to take marine mammals for the purpose of protecting the animals or returning them to their natural habitat. The new provision clarifies the old authority and extends it to Federal officials so that they, as well as state or local employees, may "take" marine mammals in the course of their official duties. The reasons for such taking are the protection and welfare of the mammal, protection of the public health and welfare, or the non-lethal removal of nuisance animals.

Under the authority of the Act prior to the amendments, NMFS established a regional network of institutions, biologists, and state and local officials to handle beached and stranded marine mammal problems in the individual States.

Marking and Tagging

This amendment authorizes the Secretary, after providing notice and opportunity for a hearing in the affected area, to prescribe regulations requiring the marking, tagging, and reporting of marine mammals taken by Alaskan natives pursuant to the native exemption. This provision enables the Secretary to gather sufficient data on subsistence take by Alaska natives before it is regulated by the State. The marking and tagging of animals also allows the Secretary to monitor the disposition of the native harvest to ensure that any commercial handicraft use of marine mammal products meets the criteria set forth in the Act.

Changes in Definitions

The definition of "depleted" is altered to remove a decline "to a significant degree over a period of years" as a basis for a depletion finding. Now, "depleted" means a species or stock listed as threatened or endangered under the Endangered Species Act or below OSP.

The adjective "optimum" is removed throughout the MMPA wherever it precedes the words "carrying capacity." This eliminates the circularity of definition that existed between OSP and optimum carrying capacity. The administrative focus is always on the lower end of the OSP range (maximum net productivity) because a species or stock below this level of health would be depleted and, except for scientific research, all taking permits would then be prohibited. The upper end of the

range, carrying capacity, is critical in situations of overpopulation, which has not been of concern with any of the species under NOAA's jurisdiction.

Reauthorization

The new law reauthorizes the marine mammal programs of the Department of Commerce, Department of the Interior, and the Marine Mammal Commission through fiscal year 1984. Information copies of the MMPA with the new amendments are available from the Office of Marine Mammals and Endangered Species, National Marine Fisheries Service, U.S. Department of Commerce, Washington, D.C. 20235.

Figure 2 - Ringed seal in Alaska. Photograph by L. Consiglieri, NMFS.

Small Take of Marine Mammals

After the amendments became effective, NMFS took steps to implement the amendment relating to a "small take" of marine mammals by U.S. citizens engaged in a specific activity in a specific geographical location other than commercial fishing. NMFS published a request in the Federal Register on November 20, requesting information and an advance notice of proposed rulemaking. The Notice solicited information and suggestions from interested persons on types of activites that might be authorized under the "small take" Section 101(a)(5) of the Act.

NMFS was aware that seismic operations on the ice in the Beaufort Sea might affect ringed seals, and that seismic operators would probably request an authorization under the new amendment. The U.S. Geological Survey (USGS), Department of the Interior, furnished information concerning oil and gas activities on or over the Outer Continental Shelf (OCS) and potential impacts of on-ice or waterborne geophysical surveys; logistical support for exploration, development, and production activities; OCS drilling and exploration related activities; and OCS development and production related activities.

The International Association of Geophysical Contractors (IAGC) and the National Ocean Industries Association (NOIA) jointly submitted information concerning on-ice marine geophysical exploration off the North Slope of Alaska. Information included a description of the activities, potential impacts on ringed seals and their habitat, and suggested means of monitoring and reporting. ARCO Exploration Company provided information on both onshore and offshore geophysical surveys in the Beaufort and Chukchi Seas, including a discussion of potential impacts to certain whale species during open water surveys and to ringed seals during on-ice surveys, to their habitats, and on their availability for subsistence purposes. Later, NMFS received a formal request from the IAGC to allow the taking of ringed seals incidental to on-ice marine geophysical activities in the Beaufort Sea.

The Proposed Regulations Governing Small Takes of Marine Mammals Incidental to Specified Activities (50 CFR Part 228) appeared in the Federal Register, March 3, 1982. In addition, specific regulations to govern the taking of ringed seals incidental to on-ice seismic exploratory activities in the Beaufort Sea from 1982 through 1986 were proposed after NMFS made a preliminary finding of "negligible impact" on ringed seals. After a 30-day public review and comment period, the NMFS will decide whether to publish final regulations. The Federal Register Notice also requested companies that will be conducting activities based on the final regulations to submit requests for

Letters of Authorization, the mechanism NMFS will use to authorize the taking of marine mammals.

Return of State Management Regulations

The NMFS has proposed regulations to implement the new amendments to the Act concerning return of marine mammal management to States. The NMFS and the Fish and Wildlife Service plan to have corresponding regulations published simultaneously for public comment by May 1982.

These regulations are designed to guide State applicants through the new return of management process established by Congress. The proposed regulations will establish procedures for the transfer of marine mammal management authority to the States, the form, and minimum requirements of a State application, the relationship between Federal and state wildlife agencies, both prior and subsequent to the transfer, and the revocation and return to NMFS of management authority.

General Permits - Incidental Take of Marine Mammals During Commercial Fishing Operations

A general permit system established under the Act authorizes the incidental taking of marine mammals by domestic and foreign fishermen during commercial fishing operations. General permits are issued to foreign fishing associations whose nations hold a Governing Fishery Agreement with the United States; the agreement allows them to fish in the U.S. fishery conservation zone. Tables 1 and 2 include a list of foreign and domestic fishing corporations with permits and the numbers of marine mammals they are allowed to take. The general permit to a foreign country involving the largest number of animals was given to Japan for 1981, 1982, and 1983 to take 5,500 Dall's porpoise, 25 northern sea lions, and 450 northern fur seals each year during high-seas salmon gillnet fishing.

Domestic fishermen, except those involved in the yellowfin tuna fishery, are allowed to apply for certificates of inclusion under general permits granted to the Pacific Coast Federation of Fishermen's Association. These permits, which were issued December 30, 1980, have been extended to December 31, 1983, and allow a take of 2,480 animals each year.

The requirements for domestic fishermen to obtain a certificate of inclusion have been simplified and the previously required $10.00 fee has been waived to encourage fishermen to provide data on the incidental catch of marine mammals. In the State of Washington, certificate applications were sent out with State fishing license renewal notices, and, in Oregon, applications were sent to all license holders.

The Northwest Region's effort to encourage commercial fishermen to obtain the certificates has resulted in a substantial increase in the number issued to commercial fishermen; 87 were issued in 1980 and 3,000 in 1981. The number of reports received on marine mammal/fisheries interactions and incidental take increased from 13 in 1974-80 to over 200 in 1981.

The Southeast Region issued 74 vessel certificates of inclusion to 14 companies. One incidental take of a bottlenose dolphin was reported in the menhaden purse-seine fishery in the Gulf of Mexico.

The Alaska Region issued 42 certificates to domestic fishermen in 1981. There were no reports of any incidental takings by these permit holders.

In the domestic fishery, the permit involving the largest numbers of animals was issued to the American Tunaboat

Association to take 20,500 porpoise each year from 1981 through 1985. In 1981, the total allowable take of marine mammals under both domestic and foreign commercial fishing permits was 29,474 animals.

Scientific Research and Public Display Permits

One exception to the moratorium on taking is the provision which allows permits to be issued for taking or importing marine mammals for scientific research or public display. Three steps must be taken before a permit can be granted.

1. Receipt and initial review of the application by NMFS, publication of a notice of receipt in the Federal Register, and transmittal of the application to the Marine Mammal Commission for review;

2. A 30-day review of the application by NMFS, the Commission, the public, and other Federal agencies; and

3. Final processing by NMFS, including consideration of comments, and approval or denial of the application.

The primary objective of the permit system is to ensure that the removal of animals from the wild will not harm the population or their ecosystem.

During the past year, 72 applications were considered. Of these, 60 have been resolved; 34 scientific research permits were issued, and 16 public display permits were issued. There were 87 modifications, amendments, or authorizations to permits. NMFS monitored 269 permits that had valid authorizations for take or related activities.

In addition, NMFS issues Letters of Agreement for animals not covered by permits. These Agreements may be used only for animals already in captivity and usually involve placing rehabilitated beached or stranded animals into a suitable public display facility. Since no taking is involved, most Agreements are handled at the Regional level. NMFS encourages using these animals rather than taking additional ones from the wild.

The Animal and Plant Health Inspection Service (APHIS), Department of Agriculture, is responsible under the Animal Walfare Act (AWA) for the humane handling, care, treatment, and transportation of marine mammals. Standards developed by APHIS are incorporated as conditions to all permits issued by NMFS, both foreign and domestic, that involve captive marine mammals. A Cooperative Agreement by APHIS, Fish and Wildlife Service, and NMFS ensures that standards are applied uniformly to all marine mammals in captivity; provides guidance to persons responsible for the marine mammals; and ensures that all responsibilities of the agencies are met.

During 1981, NMFS revised the application instructions package. In addition to clarifying the instructions, this

package gives background information on permit modification procedures, Letters of Agreement, and related topics such as requirements under the Animal Welfare Act and Convention on International Trade in Endangered Species of Wild Fauna and Flora. Continuous updating of the instructions have simplified the permit process as evidenced by a 60 percent reduction in the number of incomplete applications. In addition, permitted activities are now more often covered by authorizations or modifications to existing permits which serves to simplify the system for both the applicant and reviewers.

The following tables which appear in the appendix provide a detailed overview of the permit program:

- common and scientific names of marine mammals requested in scientific research/public display permit applications (table 3)
- summary of permit applications (table 4);
- cetacean take requested in scientific research/public display permit applications (table 5);
- pinniped take requested in scientific research/public display permit applications (table 6);
- cetacean take authorized by scientific research/public display permits (table 7);
- pinniped take authorized by scientific research/public display permits (table 8);
- authorized take for permanent removal from the wild - cetaceans (table 9);
- authorized take for permanent removal from the wild - pinnipeds (table 10);

Marine Mammals - Fisheries Interactions

When marine mammals interact with sport and commercial fisheries, they are sometimes killed, injured, or harassed, during fishing operations. They take or damage fish caught on lines or in traps and nets; they damage fishing gear during these encounters or when they accidentally become entangled; and, sometimes they compete with fishermen for the same fish and shellfish resources.

Before the Act, sport and bounty hunting and various forms of harassment were used to control the distribution, abundance, and behavior of marine mammals. The Act imposed a moratorium on such activities and, in recent years, animals in certain areas apparently have become more numerous and bolder in their interactions with fishermen and fishing gear. The most acute problems seem to involve seals, sea lions, and the salmon gill net fisheries in several areas of Alaska and the Columbia River in Washington and Oregon.

Columbia River Study

Early in 1980, with funding from the National Marine Fisheries Service, the Washington Department of Fish and Game, in cooperation with the Oregon Department of Fish and Wildlife, initiated a study of marine mammals-fisheries interactions in the Columbia River and adjacent waters. Partial support was also provided by the Columbia River Estuary Data Development Program and the Marine Mammal Commission.

The general objectives of this study are to

- determine how marine mammals affect, and are affected by, sport and commercial fisheries in the Columbia River and adjacent waters;
- provide the information needed to define the optimum sustainable population levels (as required by the MMPA) of selected species of marine mammals in the study area;
- continue recent efforts to monitor marine mammal populations along portions of the coast of Oregon and Washington; and
- identify and evaluate methods to reduce the incidental take of marine mammals, damage to gear, and the loss of fish.

Results of the first two years' study indicate little interaction between the sport salmon fishery and marine mammals. However, interaction between marine mammals and the commercial

gillnet salmon fishery was substantial. Damage to fish catch ranged from 1 percent of Chinook salmon caught in the Columbia River to 31 percent of Chinook salmon caught in the Grays Harbor area of Washington. Damage (measured by percent of damaged fish) was consistently higher when fish catches were low. Harbor seals appear to be responsible for nearly all damage to fish caught in gillnets. Although, sea lions also damage fishing gear when they migrate into the area in winter.

Most seals that are entangled in nets drown or are killed before they are removed from the nets. Seals are also harassed with gunfire in attempts to scare them away from the nets. Incidental take rates have been sampled, but reliable estimates of incidental take levels have not yet been made. However, the incidental take of harbor seals has not been sufficiently high to suppress a growing harbor seal population; since 1976, the annual rate of increase in numbers of harbor seal pups born has been 17 percent. The normal prey of harbor seals in the Columbia River consists primarily of fish of 29 different species including lamprey, 2 species of crustacea, and 1 cephalopod.

California

In 1981, the California Department of Fish and Game completed the second year of a two year investigation of marine mammal/fishery interactions. These studies which were contracted cooperatively by the Southwest Fisheries Center and the Southwest Region will be published as a Southwest Fisheries Center Administrative Report. In summary, the report states that California sea lions were found to interact in varying degrees with most fin fish fisheries, harbor seals interact with gillnet fisheries for herring in coastal bays and salmon in the Klamath River, and pilot whales interact with the squid fishery in the Southern California Bight. Economic loss to the fisheries has been estimated, but observed and reported interactions were too infrequent to allow accurate assessment of impacts to the marine mammal populations.

The second phase of this program, population assessment, was implemented in 1981 when the Southwest Fisheries Center and Southwest Region jointly funded a contract with the California Department of Fish and Game to collect information necessary to assess the resident harbor seal population in California. The contract included studies of methods to reduce marine mammal-fishery interactions, further investigation of the take of marine mammals in the round-haul fisheries, and a survey of attitudes towards marine mammals among patrons of the charter boat fleet.

Maine

The University of Maine, under a contract funded by NMFS, is studying the extent of marine mammal-fisheries conflict in the Gulf of Maine. The study includes the distribution and abundance of harbor seals as well as habitat use patterns, population

discreteness, and degree of harassment by humans. In addition, the extent and impact of all marine mammal-fisheries interactions in the Gulf of Maine is being investigated, including incidental take, subsistence take, and economic impact on fisheries.

Figure 3 - NMFS employee, Dana Seagars, with stranded pilot whale on the beach of Cuyler Harbor, San Miguel Island, California. Photograph by Robert L. DeLong, NMFS.

Marine Mammal Stranding Network

NMFS encourages its regions to develop and assist in operating a Marine Mammal Stranding Network. The Regional Networks include individuals and organizations cooperating with a scientific director and a NMFS coordinator. Authorized members of a network may collect scientific specimen materials, record the event with the Regional Coordinator, and are obligated to assist local and Federal authorities in the disposal of the animals. Records of these strandings are forwarded to the Scientific Event Alert Network (SEAN), Smithsonian Institution, Washington, D.C. which publishes a monthly report and maintains a central computer file.

Investigation of both live and dead stranded marine mammals provides information on the food habits, incidence of disease, and reproductive biology of many coastal species. The systematic collection of these data contributes to a baseline source of information which can be used to monitor changes in coastal marine ecosystems.

In the Southeast Region, a toll-free (800) telephone hotline, monitored on a 24-hour basis, receives stranding reports. A cadre of stranding reporters and a scientific coordinator for each southeastern state has been formed. Species identification aids, stranding data forms, and information posters were widely distributed in the southeastern coastal states, Puerto Rico and U.S. Virgin Islands. As of the summer of 1981, 257 stranded marine mammals have been reported to the Network. The major numbers of strandings were the Florida manatee - 137; bottlenose dolphin - 78; pigmy sperm whale - 11; dwarf sperm whale - 5; and rough toothed dolphin - 6; also, 12 sperm whales were involved in a mass stranding.

In the Northwest Region, the Marine Mammal Stranding Network is developing a directory that identifies all participants and their functions and sets forth guidelines and necessary procedures. The Oregon State Department of Transportation, Parks and Recreation Division, has developed a "Marine Mammal Disposal Policy" for handling dead marine mammals on State beaches.

The Southwest Region continues to organize and refine the California stranding network which provides a statewide system of communication to facilitate rapid retrieval of live animals to improve their chance of survival and to provide prompt notification of researchers. A directory of participating agencies and individuals is in preparation.

Because of vast distances, the inaccessibility of most of the coastline, and the expense involved in responding to strandings, the Alaska Region has not established a formal network. If rare or unusual species are involved, appropriate institutions are immediately advised to allow the recovery of specimens.

Inter-American Tropical Tuna Commission (IATTC)

The International tuna/porpoise program approved by the Commission in 1977 was reviewed at the annual meeting in October 1981 in Paris, France. A report was made on the status of the Commission's efforts to place observers on tuna vessels operating in the eastern tropical Pacific. Although observer coverage of 104 trips was planned in 1981, only 56 were covered before the end of the year; 6 of these were 1980 trips which carried over into 1981. The obstacles to completing the scheduled sampling have included delays in completing an agreement with Mexico concerning its participation in the program, the transfer of vessel registry from one country to another, and difficulties experienced by both participating nations and certain selected vessels. Data were collected from only 4 non-U.S. trips. New techniques and gear continue to be tested to reduce the incidental take of porpoise.

International North Pacific Fisheries Commission (INPFC)

The United States and Japan agreed in 1981 to a second Memorandum of Understanding (MOU) to continue a cooperative marine mammal research program until June 1984. The first MOU was in effect from 1978 through 1981. The MOU's were developed in connection with the International Convention for the High Seas the High Seas Fisheries of the North Pacific Ocean.

At the March 1981 meeting of the Scientific Subcommittee of the Ad Hoc Committee on Marine Mammals, the U.S. presented a summary of the results of the 3-year cooperative research program which centered on the incidental take of Dall's porpoise in the Japanese high seas gillnet fishery inside the fishery conservation zone. At the INPFC meeting in November, Japan presented results of the 3-year study to the Ad Hoc Committee on Marine Mammals, and the U.S. section presented a summary of research and some preliminary results of the 1981 field season.

International Whaling Commission (IWC)

A delegation from the United States attended the 33rd annual meeting of the IWC in Brighton, England, July 20 to 25, 1981. The United States has supported a moratorium on commercial whaling at every meeting of the IWC since 1972. That year, the total commercial catch limit was about 46,000 whales; this year it is down to 14,070. Although the complete moratorium on commercial whaling did not pass at the 1981 meeting, the Commission agreed to zero quotas on all stocks of sperm whales except the Northwest Pacific stock. Whaling for this stock after the 1981 season is prohibited until the IWC adopts alternative management measures based on advice from its Scientific

Committee. In effect, this amounts to a moratorium on sperm whaling. The Commission also decided to extend its ban on the commercial use of cold grenade (non-exploding) harpoons to minke whales beginning with the 1982-83 pelagic and 1983 coastal seasons. This decision, which has been objected to by Brazil, Iceland, Japan, Norway, and the Soviet Union, reflects the IWC's concern for humane killing by reducing the time between harpooning and death, and extends the ban adopted last year to all existing commercial whaling ships that use deck mounted harpoon guns.

The United States will continue to press for a moratorium on commercial whaling, a hallmark of U.S. policy in the IWC, and until this is achieved, we will press for the lowest catch limits possible and strict conformity with IWC regulations by all whaling countries. See Table 11 in the appendix for a listing of the commercial catch limits set by the 33rd Meeting. The 34th annual meeting of the IWC will be held in Brighton from July 19 to 24, 1982.

Antarctic Minke Whale Assessment Cruise. Intensive commercial exploitation of minke whales began in the Antarctic during the 1971-72 whaling season and is continuing under regulations adopted by the IWC. Since population estimates are not reliable, the IWC initiated a tagging and survey program during the 1978-79 whaling season to provide a more reliable basis for management decisions. The survey, conducted from ships provided by Japan and the Soviet Union, continued during the 1980-1981 and 1981-1982 whaling seasons and involved scientists from several countries, including the United States. The Commission agreed to consider any new data or analyses of the stock at a special meeting. This meeting, held in March 1982, agreed unanimously to take no action which means the ban will remain on further whaling from this stock. Since Japan, the only country involved in commercial whaling for this stock, objected to the ban, the issue is expected to be renewed at the July 1982 annual meeting. Results of the assessment will be provided to the IWC's Scientific Committee and used to improve management of minke whales in the Antarctic.

North Pacific Fur Seal Commission (NPFSC)

The protocol extending the Interim Convention on Conservation of North Pacific Fur Seals agreed to and signed by the four parties 1980 was ratified by the U.S. Senate on June 11, 1981 and will be in force until 1984. An understanding was added to the resolution for ratification which states "It is the understanding of the Senate that appropriate studies shall be undertaken to (1) determine the fur seal feeding habits and food requirements and the at-sea migration and distribution patterns of various age/sex classes of fur seals; (2) determine the impact of any possible adjustments in the size of the harvest on the Pribilof Island residents, the fur seal herd, and the Bering Sea ecosystem; (3) in concurrence with the Aleut, determine, if necessary, the

impact of various mutually acceptable alternative sources of employment for Pribilof Island residents on those residents, the fur seal herd, and the Bering Sea ecosystem. The results of these studies shall be reported to the Congress by the Administration for referral to the appropriate committees no later than March 1, 1984.

"Any alterations in the level of the annual commercial harvest of North Pacific fur seals should be consistent with the development of a stable, diversified and enduring economy for the Aleut residents of the Pribilof Islands. Accordingly, the Senate declares its interest in exploring the appropriateness of, among other possibilities, increasing Aleut control over operation of the harvest consistent with the terms of the Interim Convention.

"Furthermore, the Senate declares that: (1) the Secretary of State should continue to strive to conform the Interim Convention with the purposes and policies of the Marine Mammal Protection Act of 1972, as amended, and: (2) the United States may initiate adjustments in the harvest level or the U.S. share thereof, providing any adjustments are in conformity with the terms of the Interim Convention, the health of the fur seal herd, and the rights of the Aleut people."

The North Pacific Fur Seal Commission was established by the Interim Convention on Conservation of North Pacific Fur Seals of 1957. This treaty among Canada, Japan, the United States, and the Soviet Union prohibits pelagic sealing, provides for coordinated research programs, and arranges for a sharing of skins from seals harvested on land among party governments.

Analyses on feeding habits were conducted by Canada, Japan, and the United States. While revealing a predominance of fish as opposed to squid in the fur seals' diets, these studies indicate that fur seals are opportunistic feeders. Those prey species which are most abundant are those which are most important in the fur seal diet. Although the Commission did not address the concept of optimum sustainable population, the United States impressed upon other member nations the importance of ecosystem management in dealing with the fur seal resource.

In 1981, the Soviet Union harvested 8,500 seals on the Robben and the Commander Islands. The United States had a commercial harvest of 23,892 male fur seals on St. Paul Island.

US-USSR Marine Mammal Project, Environmental Protection Agreement

The purpose of the project is to promote joint research and exchange of information by U.S. and Soviet scientists on the biology, ecology, and population dynamics of marine mammals of interest to both countries. In October 1981, a project leaders

consultation was held in Moscow, USSR, to review the previous 18 months of joint work and to plan future research and exchange of scientists.

The most comprehensive research cruise conducted to date under this project was carried out from February to April (1981) in the Bering Sea. The cruise included seven U.S. scientists and was divided into two parts; the first concentrated on walrus biology, and the second part focused on the study of ice-dwelling seals and northern sea lions. During the second part of the cruise, 255 marine mammals including northern sea lions, bearded seals, largha seals, ringed seals, ribbon seals, and walruses were collected primarily in the eastern Bering Sea and along the Soviet Coast. Measurements, tissue samples, and stomach contents were collected from these animals.

In June, a U.S. scientist worked with Soviet colleagues on aerial survey methodology of small cetaceans at Black Sea research laboratories and participated in both aerial and vessel sighting surveys and compared the techniques practiced by the U.S.S.R in surveying Black Sea dolphins with U.S. survey techniques in the eastern tropical Pacific. Another U.S. scientist researched color pattern variations in cetaceans at the Institute of Developmental Biology in Moscow.

Two Soviet scientists participated in joint studies on walrus at Round Island, Bristol Bay, Alaska, and participated in harbor seal-fishery interaction studies on the Columbia River. The latter studies included aerial surveys to estimate the population of harbor seals and resighting of radio tagged seals in the Columbia River estuary and adjacent bays along the Washington coast. The Soviet scientists also studied osteological specimens at the California Academy of Sciences.

Friends of Animals, et al. v. Roe, et al., (October 1980); American Tunaboat Association (ATA), et al. v. Klutznick, et al. (December 1980)

Both actions challenge the Administrator's (NOAA) Final Decision in the 1980 tuna/porpoise rulemaking. In that decision, the Administrator published a 20,500 overall porpoise quota for each year for 1981 through 1985.

In the first lawsuit, the District of Columbia District Court on July 31, 1981, issued a memorandum opinion and order approving the 1981-85 permit and regulations. The Court noted that particular deference must be given to the agency's decision on technical and scientific matters, and that it was supported by substantial evidence in the record. The court granted the government's motion for summary judgment and dismissed the law suit.

Subsequently, the ATA pursued a similar lawsuit in the Southern District California Court challenging certain of the agency's findings in the rulemaking. Despite the agency's argument that another District Court had determined these findings (and the entire rulemaking decision) supported by substantial evidence in the record, the judge ordered the agency to make new calculations of the status of porpoise stocks based on certain findings the agency did not adopt. The outcome of these calculations and the agency's motion for recommendation are pending.

Balelo v. Klutznick (October 1980)

This lawsuit brought by representatives of the U.S. fishing fleet in the U.S. District Court for the Southern District of California challenged the statutory and consitutional authority for the government's use of information gathered by observers on board tuna vessels for enforcement of the quotas and other provisions of the regulations. On July 27, 1981, the District Court ruled that in the absence of statutory authority, such use of observer-gathered information violated the Act and the Fourth Amendment of the U.S. Constitution. The Court enjoined the government from using such information for civil or criminal penalty proceedings, forfeiture actions, permit or certificate sanctions, or any purpose except scientific research. On September 22, 1981, the Government appealed the District Court's decision to the U.S. Court of Appeals for the Ninth Circuit.

Friends of Animals vs. Baldrige (July 1981)

The plaintiffs have challenged the permit issued to the Japanese salmon fishing cooperative to take 5,500 Dall's porpoise each year for 3 years. Briefs are being filed now before the U.S. District Court in the District of Columbia.

The Act makes it illegal to take or import marine mammals or their parts or products, unless an exception has been made. The moratorium is enforced by NMFS special agents and state enforcement officers under contract to NMFS. During the past year, California was the only State with which NMFS renegotiated a contract.

In the past year, most of the 385 alleged violations of the Act investigated by NMFS and State enforcement personnel involved the illegal importation of marine mammal parts and products.

In February 1981, the Southwest Region's first criminal case brought to trial under the Act resulted in the suspect being found guilty of aiding and abetting in the shooting of a sea lion and sentenced to 16 days in the county jail and placed on probation for two years. The boat and weapons used in the shooting were forfeited.

Also, two men pled guilty in North Carolina to killing an Atlantic bottlenose dolphin. Each received a 1-year suspended sentence and a suspended $2,000 fine.

The Southeast Region reports that an increase in the number of diving, tour, and excursion boats in the Virgin Islands has resulted in increased human interest and interference with breeding humpback whales. The Region may seek increased resources to protect these whales while they are breeding and giving birth.

Special Agents in the Northwest Region are working with the Department of Justice, NOAA General Counsel, and the U.S. Fish and Wildlife Service in an extensive investigation of unlawful commercial activities involving sperm whale teeth and walrus tusks. This investigation has covered several states and includes dealers as well as craftsmen.

Figure 4 - Growth patterns on the rostrum of right whales are used to identify individual animals. Photograph taken in Lower Bay of Fundy off Lubec, Maine by Scott Kraus, New England Aquarium, Boston, Mass.

Bowhead Whale

Management

Concern for the endangered bowhead whale led the International Whaling Commission (IWC) to set a quota in 1977, for the first time, on the number that could be taken during the 1978 subsistence hunt by Alaska natives. Although the MMPA allows a take of marine mammals by natives for subsistence, even if the species is threatened or endangered under the Endangered Species Act, the United States follows the IWC quota restrictions and implements these by regulations under the Whaling Convention Act of 1949.

The IWC set an overall quota for 1981 through 1983 of 45 bowhead whales landed or 65 struck, with no more than 17 to be landed in any one year. In March 1981, NOAA and the Alaska Eskimo Whaling Commission (AEWC) concluded a cooperative agreement regarding management of bowhead whale subsistence hunting during 1981 and 1982. The agreement authorized a quota for 1981 of 17 whales landed or no more than 32 whales struck. Since 1978, NMFS has stationed enforcement agents in the principal Eskimo bowhead whaling villages to monitor the harvest of the traditional spring and fall hunt.

The natives reached the 1981 quota during fall hunting at Kaktovik where 3 whales were struck and landed bringing the annual totals to 17 landed and 11 struck and lost. During the spring hunt, NMFS agents were based in Gambell/Savoonga, Point Hope and Barrow, and during the fall, they were in Kaktovik and Barrow.

Conservation efforts and cooperation by the Eskimo whaling leadership worked well under the cooperative agreement that allowed the Eskimo whaling community to regulate and manage its traditional subsistence hunting and resulted in compliance with commitments to IWC provisions. The AEWC amended its management plan in August 1981 to prohibit the use of the shoulder gun until a line and float have been secured to the whale which should minimize the possibility of whales being struck but lost. The AEWC also reviewed whaling practices employed by Eskimo whalers during 1981 and, as a result of its review, suspended the right of two harpooners to participate in bowhead whaling for a 1-year period.

In February 1982, the NMFS Regional Director in Alaska negotiated an amendment to the 1981 Cooperative Agreement concerning the management, inspection, and reporting of bowhead whale subsistence harvests. The cooperative agreement

establishes a strike limit for 1982 of 19 whales and provides for civil penalties in the event more than 16 whales are landed. The agreement was also extended to apply to the 1983 hunt.

Table 1

Annual Quotas and Take of Bowhead Whales 1977-1982

	Quota[1]		Actual Take		
	Landed	Strikes	Landed	Struck but lost	Total Strikes
1977	no quotas		29	82	111
1978	14	20	12	6	18
1979	18	27	12	15	27
1980	18	26	16	18	34
1981[2]	17	32	17	11	28
1982	16	19			

The State of Alaska, the Alaska Eskimo Whaling Commission, the oil and gas industry, NMFS, and the Bureau of Land Management (BLM), have interests and responsibilities in protecting bowhead whales. The NMFS has lead-agency responsibility under both the Marine Mammal Protection Act and the Endangered Species Act. While NMFS is responsible for carrying out biological studies of the bowhead whale population, BLM is responsible for developing information needed to assess and mitigate the possible adverse impacts of OCS activities on the bowhead and its habitat.

Research

NMFS's bowhead whale research program is the responsibility of the National Marine Mammal Laboratory (NMML) in Seattle, Wash. The 1981 spring bowhead whale research was conducted April 11 through June 2. The census, harvest, and biological collection elements of NMFS research were contracted to the Alaska Eskimo Whaling Commission who subcontracted to Arctic Technical Research of Fairbanks.

The bowhead migration past Point Barrow, Alaska, beginning April 11 was the earliest migration we have witnessed since our studies began in 1974. Analyses of four years of data collected

1/ A landed whale counts as a strike. A quota is filled when either the landed quota is reached or when the quota of total strikes is reached.

2/ Totals for 1981, 1982, 1983 combined cannot exceed 45 landed or 65 total struck.

from 1978 to 1981 indicate that the best estimate of the population size lies within the level established in 1978 of 1,783 to 2,865 animals, and is now believed to be within the upper half of that estimate. Census research is directed primarily at determining whether or not the abundance of the population is changing. Research on ageing, by using biochemical methods to study eye lens nuclei, continues on bowheads and on fin whales with the aim of developing a standard for large whales. Proteins from bowhead whale tissues examined by electrophoretic techniques indicate that the genetic variability in the bowhead population may be higher than expected when compared to other whales studied. Stomach and intestinal contents from whales landed in 1980 consisted primarily of euphausiids and copepods. Competition with arctic cod for prey may be important in some years.

Aerial surveys were made from May 6 through May 21 near the ice-based census team at Point Barrow to determine the distribution of migrating whales across the lead. Up to 95 percent of the whales passed with 3 miles of the edge of the shorefast ice. No bowheads were seen beyond 4.3 miles or in leads or open water beyond the nearshore lead west of Point Barrow. This is consistent with data collected since 1976. Ice-based observers counted 14 calves. A higher proportion of calves were sighted nearer the edge of the shorefast ice. Calves make up about 3 percent of the bowhead whale population.

Gray Whale

Management

Although the population of the gray whale expanded to a point where the animal was removed from the IWC's "protected" status, the continued increase in its population may be adversely affected by such human activities as whale-watching and oil and gas development. This animal, which continues to be listed as endangered under the Endangered Species Act, migrates along the West Coast and winters in the lagoons of Baja California where it calves and breeds.

Guidelines for gray whale watching were included in an educational brochure published by the Southwest Region, NMFS, in cooperation with the American Cetacean Society. Under the MMPA, failure to observe the guidelines may be interpreted as harassment which is illegal.

Research

During the third year of a cooperative research program with the Mexican Department of Fisheries, the NMML made an extensive aerial census of gray whales throughout their main winter grounds along the west coast of Baja California. At the same time, a

vessel census was made in one area (Bahia Sebastian Vizcaino) to compare the efficiency of aircraft and boat censuses. Studies in the calving lagoons were continued by personnel from the Mexican Department of Fisheries at Laguna Ojo de Liebre, Cetacean Research Associates, San Diego, at Laguna San Ignacio, and the University of California, Irvine, at Laguna Guerrero Negro.

The NMML sponsored a shore census of migrating gray whales from February to June at Point Piedras Blancas, Calif., to establish the timing of the northward movement of cows with calves and to determine the proportion of calves in the population. Counts taken during the 1980-81 calving season were 19 percent higher than those taken during the 1979-80 season.

Humpback Whales

Management

At varying times of the year, the humpback whale, which has been listed under the ESA as endangered throughout its range, inhabits waters off Alaska, Hawaii, and the east and west coasts.

In the summer, a portion of the North Pacific stock spends time in Glacier Bay National Park and other areas in southeast Alaska. Most of the North Pacific population winters in the waters around the main islands of Hawaii. Activities in both areas present threats to this species; these activities include commercial and recreational vessel traffic, offshore oil and gas development, sport and commercial fisheries, and coastal development.

In the past, 20 to 25 whales were observed each year in Glacier Bay, Alaska; however, the number of whales and the length of time spent in the Bay dropped in 1978 and 1979. The National Park Service determined that increasing vessel traffic might have been partially responsible for this situation and established emergency regulations to restrict vessel traffic. In 1981, Congress appropriated special funds to the National Park Service to address the problem and the National Park Sevice transferred the funds to NMFS to carry out the studies.

In Hawaii, the concerns for the species are related to whale-watching activities; the effects of operating an inter-island hydrofoil service through certain humpback whale habitats; criteria for determining activities which constitute harassment; and the need to educate boat and aircraft operators about humpback whales.

Figure 5 - Whale watching off the Gulf of Maine. Photograph by Scott Krauss, New England Aquarium, Boston, Mass.

Research

Studies were made in Glacier Bay, Southeast Alaska, and nearby waters to determine why fewer whales now use Glacier Bay as a summer feeding ground. The most likely reasons for the change in distribution are (1) increasing boat traffic in the Bay, perhaps in combination with unusual acoustic characteristics of the Bay itself, or (2) a change in food supply. With funding from the National Park Service and a contribution from the Alaska cruise ship industry, the NMML contracted for three studies: (1) comparison of acoustic characteristics of Glacier Bay with nearby areas where whales feed; (2) study of the effects of vessels on whale behavior; and (3) assessment of available food stocks inside and outside the Bay.

Preliminary results of the acoustics study indicate that although intermittent seismic activity of glacial origin is present and physical oceanographic conditions associated with sound channeling were measured inside the Bay, it is not very different acoustically from nearby areas. The behavior data obtained by the study team clearly demonstrated that whales avoided nearby vessels of various types and sizes. Effects of vessels more than half a mile away were less clear. Observed feeding behavior in and out of the Bay was of a predominantly subsurface type, in contrast to extensive surface feeding reported in recent years. The prey study indicates herring, pollack and euphausiids were plentiful both in and out of Glacier Bay in 1981 and that generation and maturation of these and other species occur later in the Bay than outside. Prey and behavior study analyses are continuing with a second season of field research planned in 1982.

Since humpback whales can be identified by their flukes, the NMML is using photographs to identify individual eastern North Pacific humpback whales. There are 272 whales catalogued in the system and photographs of about 100 more are waiting to be added. The eastern North Pacific population is currently estimated at about 1,000 whales. There are over 60 matches within areas over time, e.g. one animal identified each year in southeastern Alaska from 1977 to 1980 by four different contributors. Also, four long distance matches have been made: Mexico 1978/Prince William Sound, Alaska 1979; Hawaii 1975/Prince William Sound 1978; Hawaii 1978/S.E. Alaska 1979; and S.E. Alaska 1978/Mexico 1980.

North Atlantic Cetaceans

Management

The NMFS Northeast Region has been reviewing data on the abundance and distribution of the large endangered whale species off the U.S. East Coast from Cape Hatteras to the U.S. - Canadian border. Most of the data came from the first year's (1979)

survey effort of the Cetacean and Turtle Assessment Program (CETAP) conducted by the University of Rhode Island under contract from the Bureau of Land Management. The three-year CETAP surveys were concluded at the end of 1981, and final analysis of the CETAP data should be available later this year.

NMFS has used the 1979 CETAP Annual Report, along with data from research funded by the NMFS, to assess the potential impacts of oil and gas leasing exploration activities on the Mid and North Atlantic outer continental shelf (OCS) under the consultation and review provisions of the Endangered Species Act and National Environmental Policy Act. The 1979 CETAP data, although recognized as preliminary and largely unanalyzed, does suggest some significant behavior patterns among cetaceans in the Gulf of Maine and Georges Bank areas.

The data show heavy use of the inshore banks along the southern edge of the Gulf of Maine (Jeffrey's Ledge, Stellwagen Bank, and Provincetown Slope) by humpback and fin whales from spring until fall. The data also suggest that the Great South Channel, a bathymetric feature resembling a funnel and located between Georges Bank and Cape Cod, is used by many large cetaceans as they migrate to and from the Gulf of Maine. Based on the CETAP data, there are significant concentrations of Odonotocetes (sperm whales, pilot whales, bottlenose dolphin and various pelagic dolphins) along the 1,000 meter contour from Cape Hatteras north to the southern margin of Georges Bank.

The New England Aquarium (NEA) has, under contract to the NMFS and the World Wildlife Fund, described the repeated usage of the lower Bay of Fundy (near Grand Manan Island) by the severely depleted North Atlantic right whale. For two successive years, the NEA surveys have revealed several cow/calf pairs using this region from July through September. Right whale mating behavior has also been consistently observed in the lower Bay of Fundy.

Research

The CETAP surveys represent the first major effort to gather information on all cetaceans found on the Northeast Region's continental shelf. The final report of the three-year program will serve as a baseline characterization of cetacean distribution, abundance, and movement patterns in the western North Atlantic.

The NMFS has used East Coast marine mammal research funds to fill in the research needs in the Northeast Region not covered by CETAP. These funds have covered the following:

- A humpback whale workshop to describe the status of the species its movement patterns, habitat usage, and the human-related pressures on the population. Recommendations were made for further research on the species.

- o A pilot study to determine the most feasible survey technique for harbor porpoise.

- o Publication, maintenance, and improvement of a Humpback Whale Fluke Identification Catalog.

- o Large whale distribution and abundance survey in the lower Bay of Fundy with emphasis in 1981 on the North Atlantic right whale.

- o Studies on the behavior of humpback whales and their use of the Cape Cod Bay/Stellwagen Bank area and the Mona Passage, Puerto Rico.

The Northeast Fisheries Center has formed a steering committee to coordinate all of the humpback whale research which is occuring in the Northwest Atlantic.

Bottlenose Dolphin

Management

The popularity of the bottlenose dolphin, especially for public display, prompted the Marine Mammal Commission to recommend an annual quota for the number of animals authorized to be removed from populations in the Southeast Region for scientific research and public display. The number removed during any calendar year cannot exceed two percent of the minimum population in a specific location.

The Southeast Region regulates the taking under permits; all permit holders authorized to take dolphins from the region are required to consult with the Regional Director about specific locations of take. At this time, taking is authorized only from the areas where quotas have been set and only until these quotas are reached.

Annual Quotas

Mississippi Sound - 35
Indian/Banana River Complex (Florida) - 7
Texas Coast - Corpus Cristi/Matagordo Bay - 17
West Coast of Florida (between Crystal River and Charlotte Harbor) - 6

Research

The Southeast Fisheries Center, through its Miami and Mississippi Laboratories, has continued to assess the population of the bottlenose dolphin. The three elements of the program include surveys of the population, analysis of the survey data, and estimation of population levels for priority inshore areas; evaluation of local herd composition and movements in the Indian/Banana River Complex to determine discrete local populations and intermixing in the inshore coastal waters; and continuation of the Marine Mammal Stranding and Salvage Network in conjunction with the Sea Turtle Network.

Tentative discrete area estimates are being made of the following near shore areas where aerial surveys have been completed; the Indian-Banana River complex, Florida east coast; Charlotte Harbor, Florida east coast; Tampa Bay, Florida west coast; St. Joseph-Apalachicola Bays complex, Florida panhandle; Mississippi Sound, Mississippi; and the Arkansas-Copano-San Antonio Bays complex, Texas. Aerial surveys continue year round and seasonal population estimates are made for each area. Except for Mississippi Sound and the Indian-Banana River Complex, abundance estimates were higher in the winter.

Also, a preliminary investigation of when this species calves has been completed using these aerial survey data. In all areas except the Indian-Banana Rivers, there appears to be an increase in the numbers of calves sighted during spring and summer surveys. Although the actual peak calving month is not known, results suggest a spring-summer calving season. No distinct calving season was discernible for the Indian-Banana River complex.

The cryogenic marking method (freeze branding) was selected for the local herd biodynamics study, and these identifying marks were readable after 14 months. Of the 88 marked dolphins, all were observed twice, and marked dolphins were present in the Indian/Banana River Complex throughout the year. A total of 5,886 sightings occurred with 5,216 adult sightings and 620 calves. The average herd size for the study site was 5.17 animals over the eleven month period. Measurement data was collected on each animal marked.

Also, the Southwest Fisheries Center's La Jolla Laboratory has initiated population studies of the southern California coastal bottlenose dolphin. The studies are aimed at discerning the bottlenose population's size, movements, range, herd composition, and reproductive rate. Boat surveys and land-based surveys have been made; aerial surveys and acoustic monitoring will also be used during the research. Preliminary work indicates that some dolphins may be permanent residents of certain areas along the San Diego County coast. There appears to be a seasonal fluctuation in numbers of dolphins and herd size

with the greatest numbers occurring in July and November and the largest herds in February and July.

Dall's Porpoise

Management

Under a permit issued by NMFS, the Japanese salmon mothership fishery is permitted to take 5,500 Dall's porpoise annually inside the U.S. fishery conservation zone (FCZ). The reported total take in 1981 was 1,136. Marine mammals, primarily the Dall's porpoise, are taken during commercial gillnet operations by Japanese fishing vessels, both in and out of the U.S. fishery conservation zone, in the North Pacific and Bering Sea. A 3-year exemption from the incidental take permit requirements of the MMPA granted to the Japanese salmon fishery in the North Pacific Ocean and implemented by 1978 amendments to the North Pacific Fisheries Act of 1954, expired in June 1981. Before issuing the general permit in June 1981, NMFS published a draft and final environmental impact statement, Incidental Take of Dall's Porpoise in the Japanese Salmon Fishery. The EIS examined the impacts of the following alternatives: (1) allow the Japanese fishery to continue to take marine mammals within waters under U.S. jurisdiction (proposed and final action), through either (a) granting an incidental take permit under the MMPA, or (b) recommending legislative action to extend the permit exemption; and (2) not allow this incidental take to continue, thereby ending the Japanese salmon fishery within the U.S. FCZ, by taking no action before June 1981.

In 1981, a program was implemented to monitor the incidental take by the Japanese. U.S. observers were aboard catcherboats while the mothership fleets operated inside the U.S. FCZ and observers from the Japan Fisheries Agency were aboard catcherboats both inside and outside the U.S. FCZ. Observers collected data on the dropout rate of salmon during gillnet operations and on seabird entanglements. A cooperative research program with the U.S. Fish and Wildlife Service on seabird incidental take is being planned for 1982.

Research

The U.S.-Japan cooperative research program initiated in 1978 continued under the new 3-year U.S.-Japan MOU and MMPA permit. During censusing surveys made by U.S. biologists and Japanese nationals on Japanese salmon research vessels, Dall's porpoise was the most frequently sighted and most abundant species. Inside the FCZ, a U.S. biologist was on board each of the Japanese salmon motherships to collect biological samples and data from all incidentally taken marine mammals returned to the motherships. Japanese nationals collected samples from porpoises taken north of the U.S. FCZ. Data were also obtained on the

Figure 6 - Three color phases of Dall's porpoise. Top of photograph to bottom: dalli-type, black variant, and truei-type. Photo by C. E. Bowlby, NMFS.

distribution of the salmon catcherboats in relation to incidental take of marine mammals.

The Japan Fisheries Agency chartered a vessel dedicated to Dall's porpoise research. The vessel was used to compare incidental take rates inside and outside the U.S. FCZ, to compare rates when the vessel operated alone and when it operated as part of the commercial fleet, and to assess annual variation in the rates by comparing incidental take rates with 1981 observations. The incidental take on board the dedicated vessel was substantially lower in 1981 (0.11 porpoise per set in 18 gillnet sets) than in 1980 (2.6 porpoise per set in 10 sets). Examination of environmental data shows slight differences in conditions in the two years with surface water temperature and Beaufort state ranges being slightly higher and lower, respectively in 1981. Although conditions for sighting marine mammals were more favorable in 1981, there were fewer Dall's porpoise sighted during set operations (one sighting during 14 sets in 1981 compared to 9 sightings in 14 set operations in 1980).

Porpoise* and Purse Seine Fishing for Yellowfin Tuna

Management

NMFS Issued a general permit to the American Tunaboat Association (ATA) in December 1980 that allowed an annual take of 20,500 porpoises each year from 1981 through 1985. In the 1981 fishing season, about 19,000 animals were killed during purse seine fishing for yellowfin tuna by the U.S. fleet in the eastern tropical Pacific Ocean.

The regulations that established the yearly quota also set individual allowable mortality limits for the various porpoise stocks. The U.S. tuna fishing industry questioned the individual stock quotas and petitioned NMFS to modify the quotas in order to allow fishermen to tailor their fishing strategies to the variations in the availability and location of yellowfin tuna. Amendments to modify the quotas were proposed by NMFS on January 1, 1981 and final modified quotas were published in the August 1981 Federal Register. NMFS was asked also by the industry to reconsider a ban on "sundown" sets which in the past have resulted in high porpoise mortality. NMFS is reconsidering the regulatory ban on sundown sets.

The Southwest Regional Office manages the NMFS tuna/porpoise

* NMFS uses the term porpoise, rather than dolphin, to prevent confusion with the dolphin fish, an object of sport and commercial fishing. The common name is used when discussing individual species or stocks, such as eastern spinner dolphin.

program; this involves responsibility for training observers, inspecting vessels, and generally educating the industry about porpoise saving techniques.

NMFS inspected the porpoise safety gear on 86 vessels in the ports of San Diego, Calif. and Panama City Panama to make sure the vessels were complying with U.S. marine mammal regulations. Further, tuna seiner operator workshops were held for 60 skippers. A total of 165 vessel operators hold Certificates of Inclusion under the ATA general permit.

Both the U.S. government and the IATTC sponsor observers on tuna vessels. In 1981, observers completed 91 trips aboard U.S. flag tuna vessels. Of these, 54 were cooperative cruises with the IATTC with the remainder sponsored by NMFS.

Table 2 Total incidental porpoise mortality and serious injury for U.S. and Non-U.S. vessels, 1971-1981

Year	U.S. Vessels	Non U.S. Vessels	Total
1971	246,213	15,715	261,920
1972	368,600	55,078	423,600
1973	206,697	58,276	264,900
1974	147,437	27,245	174,680
1975	166,645	27,812	194,450
1976	108,740 (quota-78,000)	19,482	128,220
1977	25,452 (quota-62,429)	25,901	51,350
1978	19,366 (quota-51,945)	11,147	30,510
1979	17,938 (quota-41,610)	6,837	24,770
1980	15,000 (quota-31,150)	27,000	42,000
1981	19,000 (quota-20,500)		

Transfers of Purse Seine Vessels

Since 1977, about twenty-five purse seine vessels have transferred from U.S. flag and registry to foreign flag. Most of these transfers were to nations fishing in the eastern tropical Pacific Ocean (ETP). As a result of the recent re-registry of 11 U.S. built, Mexican and Cayman Island purse seine vessels to U.S. flag, only fourteen vessels remain under foreign flag; six of these do not fish in the ETP. During this time, about 17 vessels were built in U.S. shipyards for foreign owners. These vessels can transfer without conditions.

On February 10, 1982, the NMFS recommended removing all conditions imposed on the transfer of documented (i.e. used) U.S. purse seine vessels to foreign flag. Conditions on transfers had been imposed in 1977 when there was concern that the promulgation of porpoise protection regulations would cause U.S. tuna boat owners to transfer to foreign flag to avoid these regulations.

Since that concern no longer exists, and since most of the purse seining nations have been determined to be fishing in substantial compliance with U.S. porpoise protection regulations, this policy is no longer necessary.

Foreign Nations Involved in Purse Seining for Yellowfin Tuna. The Act provides for the prohibition of fish and fish products caught with commercial fishing technology which results in an incidental kill or serious injury of marine mammals in excess of U.S. standards. U.S. regulations provide that the importation of yellowfin tuna and tuna products from nations known to be involved in the tuna purse seine fishery in the eastern tropical Pacific Ocean is contingent upon certain findings by the Assistant Administrator for Fisheries. One of these requirements is for a responsible government official to certify that tuna purse seine vessels under their flag are fishing with porpoise rescue gear installed in their nets similar to that required of U.S. purse seine fishermen. In 1981, the NMFS determined that Bermuda, Canada, the Cayman Islands, Costa Rica, Ecuador, El Salvador, Korea, Netherlands Antilles, New Zealand, Panama, and Venezuela were all fishing in substantial conformance with U.S. regulations. Mexico and Peru remain under an MMPA tuna importation prohibition while the prohibition against the Congo and Senegal imposed in 1980 was rescinded because neither nation was fishing for yellowfin tuna in the ETP.

Research

The Southwest Fisheries Center continued to assess the population size and biology of dolphins involved in the U.S. tuna purse-seine fishery. Three new approaches to improve stock assessment were tested. One of the approaches involved precision aerial photographs taken on a survey in 1980 and analyzed by scientists of the Center and the IATTC to obtain dolphin length measurements. Preliminary results suggest that the technique has adequate precision for use in estimating the annual production of calves. The photographs can also be used to estimate school size. Comparison of counts of dolphins in the photographs with visual school size estimates suggest that visual estimates may slightly underestimate the size of large schools.

The second technique was the successful use of satellite-linked transmitters to track two dolphins off Hawaii. The experiment proved that a small telemetry system could be used for tracking dolphin movements with a satellite and that the technique would be useful in studying dolphin seasonal migrations, stock boundaries, and school integrity.

The third technique involved the examination of the detailed structures in the teeth from a large sample of offshore spotted dolphins killed in the purse seine fishery. Information on the age composition of the kill can be used by scientists to extrapolate information on the health of the dolphin stocks such as their reproductive capacity. This new technique was developed

using teeth from captive Hawaiian spinner dolphins whose ages were known and whose tooth layers were marked from periodic dosages of tetraycline. The layers in the teeth were found to correspond to time periods.

A 2-month aerial survey was made near Costa Rica to study the effects of environmental conditions on aerial sightings which are used to estimate the density of dolphin schools. Repeated flights were made in the same area under different weather and sea states to determine if these conditions affect the observer's ability to see the schools.

The Center co-sponsored an international conference and workshop on "Cetacean Reproduction: Estimating Parameters for Stock Assessment and Management." The conference reviewed the behavior, functional morphology, and physiology of cetacean reproduction as well as addressed problems and new approaches in methodology. The workshop covered collection, preparation, interpretation, and use of biological data in stock assessment and management. The conference provided additional information for the continuing Center research program on the life history of small cetaceans.

Platforms of Opportunity Program

Since 1971, the Northwest Fisheries Center has been collecting marine mammal sightings from a number of sources under the auspices of the Platforms of Opportunity Program (POP). These sightings are made by members of NOAA and Coast Guard vessels, U.S. Forest Service naturalists aboard Alaska State ferries, private fishing vessels, U.S. observers aboard foreign fishing vessels, and numerous other biologists and boaters. NOAA's Outer Continental Shelf Environmental Assessment Program (OCSEAP) contracted the National Marine Mammal Laboratory to analyze backlogged 1978-1980 POP sightings in an attempt to further describe the distribution of marine mammals in the Gulf of Alaska. Using computer plots of these data and historical information, distributional limits for all species found in the Gulf of Alaska have been determined. Recent in-house use of POP data include the determination of a suitable research location for gray whale feeding studies in the northern Bering Sea and the determination of the extent of Dall's porpoise distribution in the North Pacific. The BLM will use the data for both draft and final environmental impact statements in determining which marine mammals species are likely to occur in or near oil lease sites in the Gulf of Alaska.

The Northeast Fisheries Center funds a similar program using observers on NOAA vessels and by contracting to private groups such as the Cetacean Research Unit. Marine Mammals are observed from Maine to the Hatteras area of North Carolina.

Figure 7 - Mixed group of California sea lions and northern fur seals at Pt. Bennett on San Miguel Island, California. Photograph by Dana Seagars, NMFS.

Channel Islands National Park, California

Management

The legislation which established the Channel Islands National Park instructed the Departments of Interior and Commerce to cooperate in the development of a Natural Resources Study and in the Park planning processes which pertain to marine mammals. Therefore, the Southwest Region and the Southwest Fisheries Center are developing management and research plans for pinniped populations in the Park in consultation with the National Park Service, the State of California, and the Office of Coastal Zone Management (NOAA). The Act mandates a minimum 10-year cooperative effort. A report on the status of the pinniped population in the Park, including a discussion of population dynamics, management concerns, and information needs, was submitted to the National Park Service to be a part of its first report to Congress on the status of the natural resources in the Park.

Research

The population biology and ecology of coastal marine mammal stocks of California are being investigated by the Southwest Fisheries Center with research efforts directed at California sea lions and harbor seals. Mark and recapture experiments on sea lions were conducted on the California Channel Islands to assess pup production and survival, age of a female's first pregnancy, and the animals' fidelity to their pupping areas. Data on pup reproduction is being used to assess the status of the populations.

Other studies contracted by the Southwest Fisheries Center include radio tracking of harbor seals on San Nicolas Island and the feasability of using photogrametric techniques for assessing pup production of the pinniped population in California.

The National Marine Mammal Laboratory cooperated with the Southwest Center's coastal marine mammal program and the Channel Islands National Park by providing pinniped census information from San Miguel Island for an overall assessment of pinnipeds in the Channel Islands. The studies at San Miguel Island included northern elephant seal pup production counts, northern fur seal population biology, competition for space between California sea lions and northern fur seals, and competition for food resources among the four most abundant pinniped species (northern fur seals, California sea lions, northern elephant seals and harbors seals). The northern elephant seal population continues to grow at an annual rate in excess of 10 percent with about 7,200 pups born during the 1980-81 winter pupping season. The northern fur

seal colony in Adams Cove continues to increase with 941 pups born in 1981, a 5 percent increase over 1980. During a period of unusually warm weather, large numbers of newborn pups died of heat prostration which increased pup mortality to above 30 percent in Adams Cove. Northern fur seal pup production on Castle Rock has fluctuated between 500 to 600 each year since 1976. The apparent lack of significant change over the last six years suggests that the colony is at carrying capacity with competition for rookery space the limiting factor.

Studies of allocation for food resources among the four abundant seal species were begun in 1980; over 5,100 otoliths representing 18 fish species and 640 cephalopod beaks representing at least 3 squid and 1 octopus species have been identified from scat from the four species. Time-depth recorders attached to northern fur seals provided three diving records which will be useful in intepreting food habits.

Hawaiian Monk Seal

Management

NMFS has lead-agency responsibility for the Hawaiian monk seal under the authority of both the Marine Mammal Protection Act and the Endangered Species Act. Because the species' range includes the Hawaiian Islands National Wildlife Refuge, the U.S. Fish and Wildlife Service shares responsibility for protecting the monk seal and its habitat on the refuge.

In 1976, the Marine Mammal Commission recommended that a portion of the Hawaiian monk seal's range be considered for designation as critical habitat under criteria set by the Endangered Species Act. NMFS issued a draft environmental statement in 1980; however, a final decision has been deferred until the Hawaiian monk seal recovery plan is completed. A draft recovery plan has been circulated within NMFS and a final plan will be submitted by May 1982 with implementation expected by August 1982.

NMFS reviewed and submitted a biological opinion on the "Combined Fishery Management Plan, Environmental Impact Statement and Regulatory Analysis for the Spiny Lobster Fisheries of the Western Pacific Region." The plan, prepared by the Western Pacific Fishery Management Council, indicated that except for the stock offshore Necker Island, the spiny lobster stocks offshore the Northwestern Hawaiian Island essentially are in a virgin state; there is considerable interest in developing the spiny lobster fishery, and there has been a substantial increase in fishing capacity so that over-fishing is a real possibility; and the Hawaiian monk seal and other endangered species could be affected adversely by entanglement in fishing gear, disturbance by fishing operations, or depletion of food resources. This

problem has been addressed in the recovery plan which is designed to protect and encourage the recovery of the species.

Research

A long-term cooperative study of Hawaiian monk seal biology was started in 1976 by biologists at the Northwest and Alaska Fisheries Center, the National Bird and Mammal Laboratory, U.S. Fish and Wildlife Service, and contract researchers of the Marine Mammal Commission. From 1977 to 1980, surveys were made of the status and trends of the population, and a population and behavioral study was made at Laysan Island, a small northern island of the Hawaiian archipelago. Recent censuses indicate most island populations have decreased 50 percent on the average, since the late 1950's. Monk seal populations at Kure Atoll, Midway Islands, and Pearl and Hermes Reef declined 70 to 90 percent; Lisianski and Laysan Island populations declined 50 to 60 percent while monk seal populations at French Frigate Shoals and Necker Island increased.

Currently, the Honolulu Laboratory of the Southwest Fisheries Center directs monk seal research for NMFS. An analysis of the four years of data collected on Laysan Island continues. About 50 percent of almost 5,000 dives recorded on six adult male monk seals at Lisianski Island were deeper than 20 fathoms, with maximum dives at 60 fathoms. During the summer 1981, five female pups were successfully maintained in captivity at Kure Atoll. The purpose of this project was to determine the cause of pup disappearance at Kure Atoll and to enhance pup survival. It will be repeated at Kure in 1982, and an experimental weaned-pup tagging project will be performed at Lisianski Island to evaluate the effects of tagging. Aerial survey techniques are being tested as a means of monitoring the monk seal population.

Northern Fur Seal

Management

The U.S. government employs Aleut residents to harvest male fur seals on the Pribilof Islands in Alaska. The fur seal is polgynous with one harem bull to an average of 40 female seals. The surplus males in excess of the reproductive needs of the population are harvested when they are between the ages of 2 and 6 years. These sub-adult males haul out in groups away from the females, pups, and harem bulls in the breeding areas. This separation makes it possible to herd only bachelor males inland for harvesting without disturbing the rookeries. The number of seals harvested each year is regulated by establishing size and season limits. In 1981, a total of 23,892 male fur seals, primarily 3 and 4 year olds, were harvested during the 24-day season on St. Paul Island from June 29 to July 31.

The moratorium on commercial harvest on St. George Island that began in 1973 continued into its ninth year although a subsistence harvest has taken place in recent years; 350 seals were taken for local consumption in July and August.

Research

Biological information collected by the NMML on fur seals of the Pribilof Islands of St. Paul and St. George in 1981 included determining the age of fur seals harvested, the number of adult males on the rookeries and hauling grounds, and the number of pups and seals older than pups that died on the rookeries and adjacent beaches. The number of pups born on St. Paul and St. George Islands in 1981 was also estimated. This work was reported in a NWAFC Processed Report, Fur Seal Investigations, 1981.

A major effort was made to repeat baseline data on behavior collected at St. George Island in 1974 immediately after the end of harvesting. Also, the size of the herds was monitored. Final data were obtained on the diving behavior of female fur seals, and a final experiment on estrus was completed. Radioactive tracers were used to study the energy related to obtaining food, the production of milk, and growth rate of young seals. Newborns were tagged to provide known-age subjects for future studies.

A fur seal dietary report was completed based on the prinicipal prey species of fur seals (as determined from percent of stomach content volume) and the relative abundance of the fish-squid resources of California and in the eastern Bering Sea. Although this report focused primarily on California and the eastern Bering Sea, the prinicpal prey species for the other areas were identified and discussed. The basic conclusion was that opportunistic feeding by fur seals on the most abundant available species prevailed throughout the fur seal's range in the eastern Pacific Ocean and the eastern Bering Sea.

North Atlantic Pinnipeds

Research

NMFS has funded a continuing study by the University of Maine on the abundance, distribution, and habitat use patterns of the harbor seal in the Gulf of Maine. This comprehensive tagging and aerial census effort will provide valuable baseline data concerning the species.

NMFS also funded two harbor seal and grey seal studies in Manomet and Nantucket, Mass., to better understand the long-term use of these areas that lie on the fringe of these species' normal year-round range.

A contract has been awarded to investigate the use of seal flipper radiography (X-ray) in determining age by bone growth.

Figure 8 - Bearded seal in the Bering Sea off Alaska. Photograph by L. Consiglieri, NMFS.

Appendix A

TABLE 1 - 1981 GENERAL PERMITS - COMMERCIAL FISHING INCIDENTAL TAKE [1].

		PINNIPEDIA				CETACEA		TOTAL	
		Otariidae		Phocidae					
		Applied for	Allowed	Applied for	Allowed	Applied for	Allowed	Applied for	Allowed
Category 1: Towed or Dragged Gear	Domestic (PCFFA)	350	350	250	250	0	0	600	600
	Japan (Deep Sea)	20	20	20	20	1	1	41	41
	Japan (Medium)[2]	0	0	0	0	0	0	0	0
	Poland (GRYF)	24	24	24	24	15	15	63	63
	Poland (ODRA)	40	25	40	25	24	15	104	65
	Poland (DALMOR)	48	25	48	25	30	15	126	65
	Domestic (Chipman)[3]	8	0	10	0	0	0	18	0
	Spain (ANAVAR)	20	20	20	20	20	20	60	60
	West Germany	60	20	60	20	60	20	180	60
Subtotal		570	484	472	384	150	86	1,192	954
Category 3: Encircling Gear, Not Involving Intentional Taking	Domestic (PCFFA)	300	300	400	400	40	40	740	740
	Domestic (Chipman)[3]	8	0	10	0	0	0	18	0
Subtotal		308	308	410	400	40	40	758	740
Category 4: Stationary Gear	Domestic (PCFFA)	40	40	50	50	0	0	90	90
	Domestic (Chipman)[3]	7	0	10	0	0	0	17	0
Subtotal		47	40	60	50	0	0	107	90
Category 5: Other Gear	Domestic (PCFFA)	450	450	600	600	40	40	1,090	1,090
	Japan (Longline)[2]	0	0	0	0	0	0	0	0
	Domestic (Chipman)[3]	7	0	10	0	0	0	17	0
Subtotal		457	450	610	600	40	40	1,107	1,090

1. Except Category 2: Encircling Gear, Involving the Intentional Taking of Marine Mammals
2. Requested harassment only, no mortality or serious injury intended
3. Application denied, combined with PCFFA permit

TABLE 2 - 1982 GENERAL PERMIT - COMMERCIAL FISHING INCIDENTAL TAKE

		PINNIPEDIA				CETACEA		TOTAL	
		Otariidae		Phocidae					
		Applied for	Allowed	Applied for	Allowed	Applied for	Allowed	Applied for	Allowed
Category 1: Towed or Dragged Gear	DOMESTIC (PCFFA)	350	350	250	250	0	0	600	600
	JAPAN (Deep Sea)	20	20	21	21	1	1	42	42
	JAPAN (Medium)	10	10	0	0	2	2	12	12
	POLAND (GRYF)*	24	24	24	24	15	15	63	63
	POLAND (ODRA)*	45	25	45	25	28	15	180	65
	POLAND (Dalmor)*	48	25	48	25	30	15	126	65
	SPAIN (ANAVAR)	0	0	20	20	20	20	40	40
	WEST GERMANY	60	10	60	10	60	10	118	30
	BULGARIA	8	8	8	8	8	8	24	24
	REPUBLIC OF KOREA	100	50	100	50	50	8	250	108
Subtotal		665	522	576	433	214	94	1,455	1,049
Category 3: Encircling Gear, Not Involving Intentional Taking	DOMESTIC (PCFFA)	300	300	400	400	40	40	740	740
Subtotal		300	300	400	400	40	40	740	740
Category 4: Stationary Gear	DOMESTIC (PCFFA)	40	40	50	50	0	0	90	90
Subtotal		40	40	50	50	0	0	90	90
Category 5: Other Gear	DOMESTIC (PCFFA)	450	450	600	600	40	40	1,090	1,090
	JAPAN (longline)	0	0	0	0	0	0	0	0
	JAPAN (gillnet)	475	475	0	0	5,600	5,500	6,075	5,975
Subtotal		925	925	600	600	5,640	5,540	7,165	7,065

* General Permits not issued on account of failure to secure 1982 fishing permit.

Appendix A

TABLE 1 - 1981 GENERAL PERMITS - COMMERCIAL FISHING INCIDENTAL TAKE [1].

		PINNIPEDIA				CETACEA		TOTAL	
		Otariidae		Phocidae					
		Applied for	Allowed	Applied for	Allowed	Applied for	Allowed	Applied for	Allowed
Category 1: Towed or Dragged Gear	Domestic (PCFFA)	350	350	250	250	0	0	600	600
	Japan (Deep Sea)	20	20	20	20	1	1	41	41
	Japan (Medium)[2].	0	0	0	0	0	0	0	0
	Poland (GRYF)	24	24	24	24	15	15	63	63
	Poland (ODRA)	40	25	40	25	24	15	104	65
	Poland (DALMOR)	48	25	48	25	30	15	126	65
	Domestic (Chipman)[3].	8	0	10	0	0	0	18	0
	Spain (ANAVAR)	20	20	20	20	20	20	60	60
	West Germany	60	20	60	20	60	20	180	60
Subtotal		570	484	472	384	150	86	1,192	954
Category 3: Encircling Gear, Not Involving Intentional Taking	Domestic (PCFFA)	300	300	400	400	40	40	740	740
	Domestic (Chipman)[3].	8	0	10	0	0	0	18	0
Subtotal		308	308	410	400	40	40	758	740
Category 4: Stationary Gear	Domestic (PCFFA)	40	40	50	50	0	0	90	90
	Domestic (Chipman)[3].	7	0	10	0	0	0	17	0
Subtotal		47	40	60	50	0	0	107	90
Category 5: Other Gear	Domestic (PCFFA)	450	450	600	600	40	40	1,090	1,090
	Japan (Longline)[2].	0	0	0	0	0	0	0	0
	Domestic (Chipman)[3].	7	0	10	0	0	0	17	0
Subtotal		457	450	610	600	40	40	1,107	1,090

1. Except Category 2: Encircling Gear, Involving the Intentional Taking of Marine Mammals
2. Requested harassment only, no mortality or serious injury intended
3. Application denied, combined with PCFFA permit

TABLE 2 - 1982 GENERAL PERMIT - COMMERCIAL FISHING INCIDENTAL TAKE

		PINNIPEDIA				CETACEA		TOTAL	
		Otariidae		Phocidae					
		Applied for	Allowed	Applied for	Allowed	Applied for	Allowed	Applied for	Allowed
Category 1: Towed or Dragged Gear	DOMESTIC (PCFFA)	350	350	250	250	0	0	600	600
	JAPAN (Deep Sea)	20	20	21	21	1	1	42	42
	JAPAN (Medium)	10	10	0	0	2	2	12	12
	POLAND (GRYF)*	24	24	24	24	15	15	63	63
	POLAND (ODRA)*	45	25	45	25	28	15	180	65
	POLAND (Dalmor)*	48	25	48	25	30	15	126	65
	SPAIN (ANAVAR)	0	0	20	20	20	20	40	40
	WEST GERMANY	60	10	60	10	60	10	118	30
	BULGARIA	8	8	8	8	8	8	24	24
	REPUBLIC OF KOREA	100	50	100	50	50	8	250	108
Subtotal		665	522	576	433	214	94	1,455	1,049
Category 3: Encircling Gear, Not Involving Intentional Taking	DOMESTIC (PCFFA)	300	300	400	400	40	40	740	740
Subtotal		300	300	400	400	40	40	740	740
Category 4: Stationary Gear	DOMESTIC (PCFFA)	40	40	50	50	0	0	90	90
Subtotal		40	40	50	50	0	0	90	90
Category 5: Other Gear	DOMESTIC (PCFFA)	450	450	600	600	40	40	1,090	1,090
	JAPAN (longline)	0	0	0	0	0	0	0	0
	JAPAN (gillnet)	475	475	0	0	5,600	5,500	6,075	5,975
Subtotal		925	925	600	600	5,640	5,540	7,165	7,065

* General Permits not issued on account of failure to secure 1982 fishing permit.

TABLE 3

COMMON AND SCIENTIFIC NAMES OF MARINE MAMMALS INVOLVED IN SCIENTIFIC RESEARCH/PUBLIC DISPLAY PERMIT APPLICATIONS

CETACEANS

COMMON NAME	SCIENTIFIC NAME
ATLANTIC BOTTLENOSE DOLPHIN	TURSIOPS TRUNCATUS
ATLANTIC SPOTTED DOLPHIN	STENELLA PLAGIODON
ATLANTIC WHITE-SIDED DOLPHIN	LAGENORHYNCHUS ACUTUS
BAIRD'S BEAKED WHALE	BERARDIUS BAIRDII
BLACK RIGHT WHALE, NORTHERN RIGHT	BALAENA GLACIALIS
BLAINVILLE'S BEAKED WHALE	MESOPLODON DENSIROSTRIS
BLUE WHALE	BALAENOPTERA MUSCULUS
BOTTLENOSE DOLPHINS	TURSIOPS SP.
BOTTLENOSE WHALES	HYPEROODON SP.
BOWHEAD WHALE	BALAENA MYSTICETUS
BRYDE'S WHALE	BALAENOPTERA EDENI
COMMERSON'S DOLPHIN	CEPHALORHYNCHUS COMMERSONII
COMMON DOLPHIN	DELPHINUS DELPHIS
CUVIER'S BEAKED WHALE	ZIPHIUS CAVIROSTRIS
DALL'S PORPOISE	PHOCOENOIDES DALLI
DUSKY DOLPHIN	LAGENORHYNCHUS OBSCURUS
DWARF SPERM WHALE	KOGIA SIMUS
FALSE KILLER WHALE	PSEUDORCA CRASSIDENS
FIN WHALE, FINBACK	BALAENOPTERA PHYSALUS
FINLESS PORPOISE	NEOPHOCAENA PHOCAENOIDES
FRASER'S (SARAWAK) DOLPHIN	LAGENODELPHIS HOSEI
GINKGO-TOOTHED BEAKED WHALE	MESOPLODON GINKGODENS
GRAY WHALE	ESCHRICHTIUS ROBUSTUS
GRAY'S BEAKED WHALE	MESOPLODON GRAYI
HARBOR PORPOISE	PHOCOENA PHOCOENA
HEAVISIDE'S DOLPHIN	CEPHALORHYNCHUS HEAVISIDII
HUBBS' BEAKED WHALE	MESOPLODON CARLHUBBSI
HUMPBACK WHALE	MEGAPTERA NOVAEANGLIAE
KILLER WHALE	ORCINUS ORCA
LAGENORHYNCHINE DOLPHINS	LAGENORHYNCHUS SP.
LONG-FINNED PILOT WHALE	GLOBICEPHALA MELAENA
MELON-HEADED WHALE, ELECTRA	PEPONOCEPHALA ELECTRA
MINKE WHALE	BALAENOPTERA ACUTOROSTRATA
NORTHERN BOTTLENOSE WHALE	HYPEROODON AMPULLATUS
NORTHERN RIGHT WHALE DOLPHIN	LISSODELPHIS BOREALIS
PACIFIC WHITE-SIDED DOLPHIN	LAGENORHYNCHUS OBLIQUIDENS
PILOT WHALES UNSPECIFIED	GLOBICEPHALA SP.
PYGMY KILLER WHALE	FERESA ATTENUATA
PYGMY RIGHT WHALE	CAPEREA MARGINATA
PYGMY SPERM WHALE	KOGIA BREVICEPS
RIGHT WHALES UNSPECIFIED	BALAENA SP.
RISSO'S DOLPHIN, GRAMPUS	GRAMPUS GRISEUS
ROUGH-TOOTHED DOLPHIN	STENO BREDANENSIS
SEI WHALE	BALAENOPTERA BOREALIS
SHORT-FINNED PILOT WHALE	GLOBICEPHALA MACRORHYNCHUS

COMMON NAME	SCIENTIFIC NAME
SOUTHERN RIGHT WHALE	BALAENA AUSTRALIS
SPERM WHALE	PHYSETER CATODON
SPINNER DOLPHIN	STENELLA LONGIROSTRIS
SPOTTED DOLPHIN	STENELLA ATTENUATA
SPOTTED DOLPHIN	STENELLA FRONTALIS
STENELLINE DOLPHINS	STENELLA SP.
STRAP-TOOTHED WHALE	MESOPLODON LAYARDII
STRIPED DOLPHIN, STREAKER	STENELLA COERULEOALBA
TRUE'S BEAKED WHALE	MESOPLODON MIRUS
UNSPECIFIED CETACEANS	CETACEA
UNSPECIFIED TOOTHED WHALES	ODONTOCETI
VAQUITA, COCHITO	PHOCOENA SINUS
WHITE WHALE, BELUKHA	DELPHINAPTERUS LEUCAS
WHITE-BEAKED DOLPHIN	LAGENORHYNCHUS ALBIROSTRIS

PINNIPEDS/SIRENIANS

AMSTERDAM ISLAND FUR SEAL	ARCTOCEPHALUS TROPICALIS
ARCTOCEPHALINE FUR SEALS	ARCTOCEPHALUS SP.
ATLANTIC HARBOR SEAL	PHOCA VITULINA VITULINA
BAIKAL SEAL	PHOCA SIBIRICA
BEARDED SEAL	ERIGNATHUS BARBATUS
CALIFORNIA SEA LION	ZALOPHUS CALIFORNIANUS
CASPIAN SEAL	PHOCA CASPICA
CRABEATER SEAL	LOBODON CARCINOPHAGUS
DUGONG	DUGONG DUGON
GRAY SEAL	HALICHOERUS GRYPUS
GUADALUPE FUR SEAL	ARCTOCEPHALUS TOWNSENDI
HARBOR SEALS	PHOCA VITULINA
HARP SEAL, GREENLAND SEAL	PHOCA GROENLANDICA
HAWAIIAN MONK SEAL	MONACHUS SCHAUINSLANDI
KERGUELEN FUR SEAL	ARCTOCEPHALUS GAZELLA
LARGHA SEAL, SPOTTED SEAL	PHOCA LARGHA
LEOPARD SEAL	HYDRURGA LEPTONYX
NORTHERN ELEPHANT SEAL	MIROUNGA ANGUSTIROSTRIS
NORTHERN FUR SEAL	CALLORHINUS URSINUS
NORTHERN SEA LION, STELLER SEA LION	EUMETOPIAS JUBATUS
PACIFIC HARBOR SEAL	PHOCA VITULINA RICHARDI
RIBBON SEAL	PHOCA FASCIATA
RINGED SEAL	PHOCA HISPIDA
ROSS SEAL	OMMATOPHOCA ROSSII
SOUTH AFRICAN FUR SEAL	ARCTOCEPHALUS PUSILLUS
SOUTH AMERICAN SEA LION	OTARIA FLAVESCENS
SOUTHERN ELEPHANT SEAL	MIROUNGA LEONINA
UNSPECIFIED MARINE MAMMALS	UNSPECIFIED MARINE MAMMALS
UNSPECIFIED PINNIPEDS	PINNIPEDIA
WALRUS	ODOBENUS ROSMARUS
WEDDELL SEAL	LEPTONYCHOTES WEDDELLI
WEST INDIAN MANATEE	TRICHECHUS MANATUS
WESTERN ATLANTIC HARBOR SEAL	PHOCA VITULINA CONCOLOR

TABLE 4
SYNOPSIS OF PERMIT APPLICATIONS

	AS OF MARCH 31, 1981			APRIL 1, 1981 TO MARCH 31, 1982			AS OF MARCH 31, 1982
	SCIENTIFIC RESEARCH	PUBLIC DISPLAY	SCIENTIFIC AND PUBLIC DISPLAY	SCIENTIFIC RESEARCH	PUBLIC DISPLAY	SCIENTIFIC AND PUBLIC DISPLAY	CUMULATIVE TOTAL
NO. OF APPLICATIONS SUBMITTED	201	251	9	31	15	0	507
NO. OF ANIMALS REQUESTED(TOTAL)	557,076	1,298	321	23,531	69	0	582,295
OF THESE:							
TAKEN BY KILLING	21,531	0	0	1,762	0	0	23,293
TAKEN AND KEPT ALIVE	411	1,091	99	0	34	0	1,635
KILLED IN CAPTIVITY	49	0	0	0	0	0	49
TAKEN AND RELEASED	517,555	44	219	18,039	0	0	535,857
FOUND DEAD	1,329	0	0	265	0	0	1,594
STRANDED/EXCHANGED	99	159	3	5	35	0	301
IMPORTS	3,072	0	0	0	0	0	3,072
HARASS	13,030	0	0	3,460	0	0.	16,490
ACTION TAKEN							
NO. OF APPLICATIONS FORWARDED TO MARINE MAMMAL COMMISSION	164	191	5	27	7	0	394
NO. OF APPLICATIONS REVIEWED BY MARINE MAMMAL COMMISSION	161	188	5	26	6	0	386
NO. OF APPLICATIONS WITHDRAWN	5	17	1	0	0	0	23
NO. OF APPLICATIONS REFERRED TO FISH AND WILDLIFE	0	0	0	0	0	0	0
NO. OF APPLICATIONS REFERRED TO STATES	14	1	0	0	0	0	15
NO. OF APPLICATIONS REFERRED TO REGIONS	5	13	2	0	0	0	20
NO. OF APPLICATIONS RESOLVED THROUGH AGREEMENT	1	2	0	0	0	0	3
NO. OF APPLICATIONS RETURNED DUE TO INSUFFICIENT OR INAPPROPRIATE SUBMITTAL	16	34	1	3	4	0	58
NO. OF APPLICATIONS DENIED	2	7	0	0	1	0	10
NO. OF APPLICATIONS APPROVED	158	177	5	22	5	0	367
NO. OF APPLICATIONS PENDING	0	0	0	6	5	0	11
NO. OF ANIMALS APPROVED(TOTAL)	555,738	822	263	20,853	23	0	577,699
OF THESE:							
TAKEN BY KILLING	20,014	0	0	802	0	0	20,816
TAKEN AND KEPT ALIVE	381	697	88	0	12	0	1,178
KILLED IN CAPTIVITY	49	0	0	0	0	0	49
TAKEN AND RELEASED	515,405	0	175	17,481	0	0	533,061
FOUND DEAD	847	0	0	265	0	0	1,112
STRANDED/EXCHANGED	84	125	0	5	11	0	225
IMPORTS	3,050	0	0	0	0	0	3,050
HARASS	15,908	0	0	2,300	0	0	18,208

NOTE: APPLICATIONS AND PERMITS INVOLVING HARASSMENT OF MARINE MAMMALS OR TAKING/IMPORTING OF MARINE MAMMALS FOUND DEAD USUALLY DO NOT SPECIFY NUMBERS, AND THEREFORE ARE NOT REFLECTED IN THE NUMBERS OF ANIMALS FOR THESE CATEGORIES.

TABLE 5

NUMBER OF CETACEANS REQUESTED IN SCIENTIFIC RESEARCH/PUBLIC DISPLAY PERMIT APPLICATIONS(1)

	REQUESTED AS OF MARCH 31, 1981					REQUESTED APRIL 1, 1981 THRU MARCH 31, 1982					
COMMON NAME	TAKEN BY KILLING	TAKEN AND KEPT ALIVE	KILLED IN CAPTIVITY	TAGGED OR TAKEN AND RELEASED	FOUND DEAD/ STRND	TAKEN BY KILLING	TAKEN AND KEPT ALIVE	KILLED IN CAPTIVITY	TAGGED OR TAKEN AND RELEASED	FOUND DEAD/ STRND	CUMMULATIVE TOTAL REQUESTED
ATLANTIC WHITE-SIDED DOLPHIN	------	------	------	15	------	------	6	------	------	------	21
BAIRD'S BEAKED WHALE	------	------	------	25	6	------	------	------	------	------	31
BLACK RIGHT WHALE, NORTHERN RIGHT	------	------	------	10	------	------	------	------	------	------	10
BLUE WHALE	------	------	------	75	------	------	------	------	------	------	75
BOTTLENOSE DOLPHINS	70	560	------	51,214	32	------	11	------	------	3	51,890
BOWHEAD WHALE	------	------	------	170	40	------	------	------	------	60	270
BRYDE'S WHALE	------	------	------	420	------	------	------	------	------	------	420
COMMERSON'S DOLPHIN	------	6	------	------	------	------	------	------	------	------	6
COMMON DOLPHIN	155	26	------	75,742	9	------	------	------	------	------	75,932
CUVIER'S BEAKED WHALE	------	2	------	------	------	------	------	------	------	------	2
DALL'S PORPOISE	------	------	------	910	18	960	------	------	------	------	1,888
DUSKY DOLPHIN	------	------	------	61	------	------	------	------	------	------	61
DWARF SPERM WHALE	------	------	------	------	3	------	------	------	------	------	3
FALSE KILLER WHALE	------	14	------	6	------	------	------	------	------	------	20
FIN WHALE, FINBACK	------	------	------	385	------	------	------	------	------	------	385
FINLESS PORPOISE	------	6	------	------	------	------	------	------	------	------	6
FRASER'S (SARAWAK) DOLPHIN	70	------	------	1,050	------	------	------	------	------	------	1,120
GINKGO-TOOTHED BEAKED WHALE	------	------	------	------	3	------	------	------	------	------	3
GRAY WHALE	------	------	------	219	11	------	------	------	------	15	245
HARBOR PORPOISE	------	12	------	203	49	------	------	------	------	------	264
HUBBS' BEAKED WHALE	------	------	------	------	6	------	------	------	------	------	6
HUMPBACK WHALE	------	------	------	220	------	------	------	------	10	------	230
KILLER WHALE	------	20	------	85	23	------	2	------	------	------	130
LONG-FINNED PILOT WHALE	------	------	------	------	30	------	2	------	------	------	32
MELON-HEADED WHALE, ELECTRA	45	4	------	300	------	------	------	------	------	------	349
MINKE WHALE	------	------	------	830	3	------	------	------	------	------	833
NORTHERN RIGHT WHALE DOLPHIN	------	2	------	130	18	------	------	------	------	------	150
PACIFIC WHITE-SIDED DOLPHIN	------	25	------	521	48	------	7	------	------	------	601
PILOT WHALES UNSPECIFIED	------	4	------	15	------	------	------	------	------	------	19
PYGMY KILLER WHALE	45	8	------	300	------	------	------	------	------	------	353
PYGMY SPERM WHALE	------	------	------	15	6	------	------	------	------	------	21
RISSO'S DOLPHIN, GRAMPUS	70	10	------	1,105	15	------	------	------	------	------	1,200
ROUGH-TOOTHED DOLPHIN	70	9	------	5,050	------	------	------	------	------	------	5,129
SEI WHALE	------	------	------	470	------	------	------	------	------	------	470
SHORT-FINNED PILOT WHALE	70	25	------	135	33	------	4	------	------	------	267
SOUTHERN RIGHT WHALE	------	------	------	10	------	------	------	------	------	------	10
SPERM WHALE	------	------	------	1,055	------	------	------	------	------	------	1,055
SPINNER DOLPHIN	2,929	27	------	103,967	------	------	------	------	------	------	106,923
SPOTTED DOLPHIN	4,925	10	------	157,793	------	------	------	------	------	------	162,728
STENELLINE DOLPHINS	------	------	------	100	3	------	------	------	------	------	103
STRIPED DOLPHIN, STREAKER	100	------	------	50,065	------	------	------	------	------	------	50,165
UNSPECIFIED CETACEANS	340	43	------	1,241	------	------	------	------	------	------	1,624
VAQUITA, COCHITO	------	------	------	------	2	------	------	------	------	------	2
WHITE WHALE, BELUKHA	55	20	------	------	50	10	------	------	700	30	865
WHITE-BEAKED DOLPHIN	------	2	------	------	------	------	------	------	------	------	2
TOTALS:(2)	8,944	835	0	453,912(3)	408	970	32	0	710	108	465,919

(1) SPECIMEN IMPORTS AND HARASSMENT REQUESTS NOT INCLUDED IN THIS TABLE.
(2) WHERE PERMIT APPLICANTS REQUESTED A TOTAL NUMBER OF ANIMALS TO BE TAKEN WITHOUT SPECIFYING THE NUMBER TO BE TAKEN FROM A PARTICULAR SPECIES, THE NUMBER REQUESTED WAS LISTED UNDER UNSPECIFIED CETACEA.
(3) A SINGLE APPLICATION REQUESTED 432,850 CETACEANS AND ACCOUNTS FOR NEARLY THE TOTAL NUMBER IN THIS CATEGORY.

TABLE 6
NUMBER OF PINNIPEDS REQUESTED IN SCIENTIFIC RESEARCH/PUBLIC DISPLAY PERMIT APPLICATIONS(1)(2)

COMMON NAME	REQUESTED AS OF MARCH 31, 1981					REQUESTED APRIL 1, 1981 THRU MARCH 31, 1982					CUMMULATIVE TOTAL REQUESTED
	TAKEN BY KILLING	TAKEN AND KEPT ALIVE	KILLED IN CAPTIVITY	TAGGED OR TAKEN AND RELEASED	FOUND DEAD/ STRND	TAKEN BY KILLING	TAKEN AND KEPT ALIVE	KILLED IN CAPTIVITY	TAGGED OR TAKEN AND RELEASED	FOUND DEAD/ STRND	
ARCTOCEPHALINE FUR SEALS	2	------	------	80	------	------	------	------	-------	------	82
BAIKAL SEAL	------	4	------	-------	------	------	------	------	-------	------	4
BEARDED SEAL	850	------	------	400	10	------	------	------	-------	60	1,320
CALIFORNIA SEA LION	680	476	------	1,085	484	------	------	------	1,830	30	4,585
CASPIAN SEAL	------	2	------	-------	------	------	------	------	-------	------	2
CRABEATER SEAL	2,688	------	------	8,425	------	600	------	------	630	------	12,343
GRAY SEAL	------	30	------	-------	1	------	2	------	-------	------	33
HARBOR SEALS	1,786	101	------	5,355	193	------	------	------	850	5	8,290
HARP SEAL, GREENLAND SEAL	------	40	------	-------	------	------	------	------	-------	------	40
HAWAIIAN MONK SEAL	------	2	------	1,708	------	------	------	------	531	------	2,241
KERGUELEN FUR SEAL	131	------	------	750	------	20	------	------	230	------	1,131
LARGHA SEAL, SPOTTED SEAL	1,020	------	------	1,100	------	------	------	------	-------	------	2,120
LEOPARD SEAL	588	8	------	2,700	------	100	------	------	430	------	3,826
NORTHERN ELEPHANT SEAL	150	13	------	18,923	300	4	------	------	9,520	2	28,912
NORTHERN FUR SEAL	------	32	------	-------	3	------	------	------	-------	------	35
NORTHERN SEA LION, STELLER SEA LION	795	------	------	12,500	116	------	------	------	64	------	13,475
RIBBON SEAL	730	------	------	400	------	------	------	------	-------	------	1,130
RINGED SEAL	1,590	8	------	704	25	------	------	------	-------	100	2,427
ROSS SEAL	273	6	------	885	------	10	------	------	230	------	1,404
SOUTH AFRICAN FUR SEAL	------	6	------	10	------	------	------	------	-------	------	16
SOUTH AMERICAN SEA LION	------	12	------	-------	------	------	------	------	-------	------	12
SOUTHERN ELEPHANT SEAL	133	------	------	260	------	20	------	------	230	------	643
UNSPECIFIED MARINE MAMMALS	------	------	------	-------	50	------	------	------	-------	------	50
UNSPECIFIED PINNIPEDS	------	------	12	100	------	------	------	------	-------	------	112
WALRUS	600	------	------	-------	------	------	------	------	-------	------	600
WEDDELL SEAL	571	25	37	8,521	------	38	------	------	2,784	------	11,976
WEST INDIAN MANATEE(2)	------	1	------	-------	------	------	------	------	-------	------	1
TOTALS:(2)	12,587	766	49	63,906	1,182	792	2	0	17,329	197	96,810

(1) SPECIMEN IMPORTS AND HARASSMENT REQUESTS NOT INCLUDED IN THIS TABLE.
(2) SIRENIANS HAVE BEEN INCLUDED IN THIS TABLE IN LIEU OF CREATING A SEPARATE TABLE FOR THE ONE SPECIE REQUESTED.
(3) WHERE PERMIT APPLICANTS REQUESTED A TOTAL NUMBER OF ANIMALS TO BE TAKEN WITHOUT SPECIFYING THE NUMBER TO BE TAKEN FROM A PARTICULAR SPECIES, THE NUMBER REQUESTED WAS LISTED UNDER UNSPECIFIED PINNIPEDS OR UNSPECIFIED MARINE MAMMALS, IF CETACEANS ALSO WERE INVOLVED.

TABLE 7
NUMBER OF CETACEANS AUTHORIZED IN SCIENTIFIC RESEARCH/PUBLIC DISPLAY PERMIT APPLICATIONS(1)

COMMON NAME	AUTHORIZED AS OF MARCH 31, 1981					AUTHORIZED APRIL 1, 1981 THRU MARCH 31, 1982					CUMMULATIVE TOTAL AUTHORIZED
	TAKEN BY KILLING	TAKEN AND KEPT ALIVE	KILLED IN CAPTIVITY	TAGGED OR TAKEN AND RELEASED	FOUND DEAD/ STRND	TAKEN BY KILLING	TAKEN AND KEPT ALIVE	KILLED IN CAPTIVITY	TAGGED OR TAKEN AND RELEASED	FOUND DEAD/ STRND	
ATLANTIC WHITE-SIDED DOLPHIN	------	------	------	5	------	------	6	------	-------	------	11
BLACK RIGHT WHALE, NORTHERN RIGHT	------	------	------	10	------	------	------	------	-------	------	10
BLUE WHALE	------	------	------	40	------	------	------	------	-------	------	40
BOTTLENOSE DOLPHINS	70	406	------	51,204	18	------	4	------	-------	3	51,705
BOWHEAD WHALE	------	------	------	170	130	------	------	------	-------	60	360
BRYDE'S WHALE	------	------	------	410	------	------	------	------	-------	------	410
COMMON DOLPHIN	155	18	------	75,727	------	------	------	------	-------	------	75,900
DALL'S PORPOISE	------	------	------	910	------	------	------	------	-------	------	910
DUSKY DOLPHIN	------	------	------	61	------	------	------	------	-------	------	61
FALSE KILLER WHALE	------	12	------	6	------	------	------	------	-------	------	18
FIN WHALE, FINBACK	------	------	------	340	------	------	------	------	-------	------	340
FRASER'S (SARAWAK) DOLPHIN	70	------	------	1,050	------	------	------	------	-------	------	1,120
GRAY WHALE	------	------	------	219	85	------	------	------	-------	15	319
HARBOR PORPOISE	------	6	------	105	1	------	------	------	-------	------	112
HUMPBACK WHALE	------	------	------	150	------	------	------	------	-------	------	150
KILLER WHALE	------	10	------	85	------	------	------	------	-------	------	95
LONG-FINNED PILOT WHALE	------	------	------	-------	30	------	2	------	-------	------	32
MELON-HEADED WHALE, ELECTRA	45	4	------	300	------	------	------	------	-------	------	349
MINKE WHALE	------	------	------	800	------	------	------	------	-------	------	800
NORTHERN RIGHT WHALE DOLPHIN	------	------	------	130	------	------	------	------	-------	------	130
PACIFIC WHITE-SIDED DOLPHIN	------	17	------	521	------	------	------	------	-------	------	538
PYGMY KILLER WHALE	45	4	------	300	------	------	------	------	-------	------	349
RISSO'S DOLPHIN, GRAMPUS	70	8	------	1,105	------	------	------	------	-------	------	1,183
ROUGH-TOOTHED DOLPHIN	70	9	------	5,050	------	------	------	------	-------	------	5,129
SEI WHALE	------	------	------	440	------	------	------	------	-------	------	440
SHORT-FINNED PILOT WHALE	70	22	------	135	------	------	------	------	-------	------	227
SPERM WHALE	------	------	------	860	------	------	------	------	-------	------	860
SPINNER DOLPHIN	2,929	21	------	103,967	------	------	------	------	-------	------	106,917
SPOTTED DOLPHIN	4,925	10	------	157,793	------	------	------	------	-------	------	162,728
STENELLINE DOLPHINS	------	------	------	100	------	------	------	------	-------	------	100
STRIPED DOLPHIN, STREAKER	100	------	------	50,050	------	------	------	------	-------	------	50,150
UNSPECIFIED CETACEANS	340	43	------	914	------	------	------	------	-------	------	1,297
VAQUITA, COCHITO	------	------	------	-------	2	------	------	------	-------	------	2
WHITE WHALE, BELUKHA	15	20	------	-------	50	10	------	------	700	30	825
WHITE-BEAKED DOLPHIN	------	2	------	-------	------	------	------	------	-------	------	2
TOTALS:(2)	8,904	612	0	452,957(3)	316	10	12	0	700	108	463,619

(1) SPECIMEN IMPORTS AND HARASSMENT ACTIVITIES NOT INCLUDED IN THIS TABLE.
(2) WHERE A PERMIT SPECIFIED THE TOTAL NUMBER OF ANIMALS TO BE TAKEN WITHOUT SPECIFYING THE NUMBER TO BE TAKEN FROM A PARTICULAR SPECIES, THE NUMBER AUTHORIZED WAS LISTED UNDER UNSPECIFIED CETACEA.
(3) A SINGLE PERMIT AUTHORIZED 432,850 CETACEANS AND ACCOUNTS FOR NEARLY THE TOTAL NUMBER IN THIS CATEGORY.

TABLE 8
NUMBER OF PINNIPEDS AUTHORIZED IN SCIENTIFIC RESEARCH/PUBLIC DISPLAY PERMIT APPLICATIONS(1)

COMMON NAME	AUTHORIZED AS OF MARCH 31, 1981					AUTHORIZED APRIL 1, 1981 THRU MARCH 31, 1982					CUMMULATIVE TOTAL AUTHORIZED
	TAKEN BY KILLING	TAKEN AND KEPT ALIVE	KILLED IN CAPTIVITY	TAGGED OR TAKEN AND RELEASED	FOUND DEAD/ STRND	TAKEN BY KILLING	TAKEN AND KEPT ALIVE	KILLED IN CAPTIVITY	TAGGED OR TAKEN AND RELEASED	FOUND DEAD/ STRND	
ARCTOCEPHALINE FUR SEALS	2	------	------	80	------	------	------	------	-------	------	82
BAIKAL SEAL	------	4	------	-------	------	------	------	------	-------	------	4
BEARDED SEAL	630	------	------	400	10	------	------	------	-------	60	1,100
CALIFORNIA SEA LION	680	325	------	1,055	343	------	------	------	1,680	8	4,091
CASPIAN SEAL	------	2	------	-------	------	------	------	------	-------	------	2
CRABEATER SEAL	2,688	------	------	8,425	------	600	------	------	630	------	12,343
GRAY SEAL	------	24	------	5	------	------	------	------	-------	------	29
HARBOR SEALS	1,489	68	------	4,995	47	------	------	------	700	5	7,304
HARP SEAL, GREENLAND SEAL	------	40	------	-------	------	------	------	------	-------	------	40
HAWAIIAN MONK SEAL	------	------	------	1,295	------	------	------	------	531	------	1,826
KERGUELEN FUR SEAL	131	------	------	750	------	20	------	------	230	------	1,131
LARGHA SEAL, SPOTTED SEAL	820	6	------	1,100	------	------	------	------	-------	------	1,926
LEOPARD SEAL	588	8	------	2,700	------	100	------	------	430	------	3,826
NORTHERN ELEPHANT SEAL	150	6	------	18,423	282	4	------	------	9,520	------	28,385
NORTHERN FUR SEAL	------	20	------	-------	------	------	------	------	-------	------	20
NORTHERN SEA LION, STELLER SEA LION	780	------	------	12,500	8	------	------	------	-------	------	13,288
RIBBON SEAL	630	------	------	400	------	------	------	------	-------	------	1,030
RINGED SEAL	1,310	8	------	704	25	------	------	------	-------	100	2,147
ROSS SEAL	273	6	------	885	------	10	------	------	230	------	1,404
SOUTH AFRICAN FUR SEAL	------	------	------	10	------	------	------	------	-------	------	10
SOUTH AMERICAN SEA LION	------	12	------	-------	------	------	------	------	-------	------	12
SOUTHERN ELEPHANT SEAL	133	------	------	260	------	20	------	------	230	------	643
UNSPECIFIED MARINE MAMMALS	15	------	------	15	------	------	------	------	-------	------	30
UNSPECIFIED PINNIPEDS	20	------	12	100	25	------	------	------	-------	------	157
WALRUS	200	------	------	-------	------	------	------	------	-------	------	200
WEDDELL SEAL	571	25	37	8,521	------	38	------	------	2,600	------	11,792
TOTALS:(2)	11,110	554	49	62,623	740	792	0	0	16,781	173	92,822

(1) SPECIMEN IMPORTS AND HARASSMENT ACTIVITIES NOT INCLUDED IN THIS TABLE.
(2) WHERE A PERMIT SPECIFIED THE TOTAL NUMBER OF ANIMALS TO BE TAKEN WITHOUT SPECIFYING THE NUMBER TO BE TAKEN FROM A PARTICULAR SPECIES, THE NUMBER AUTHORIZED WAS LISTED UNDER UNSPECIFIED PINNIPEDS OR UNSPECIFIED MARINE MAMMALS, IF CETACEANS WERE ALSO INVOLVED.

TABLE 9
SUMMARY OF PERMITS FOR PERMANENT REMOVAL FROM THE WILD - CETACEANS
AS OF MARCH 31, 1982

SPECIES	******** PERMITS ********			********** NUMBER OF ANIMALS **********					
	ISSUED	EXPIRED	CURRENT	REQUESTED	AUTHORIZED	REPLACEMENTS	AUTHORIZATION EXPIRED	TAKEN (1)	TAKE REMAINING
ATLANTIC WHITE-SIDED DOLPHIN	1	0	1	6	6	0	0	0	6
BOTTLENOSE DOLPHINS	80	62	18	493	480	21	122	300	86
COMMON DOLPHIN	5	3	2	181	173	5	144	326	7
FALSE KILLER WHALE	4	2	2	12	12	0	4	1	7
FRASER'S (SARAWAK) DOLPHIN	2	2	0	70	70	0	70	0	0
HARBOR PORPOISE	1	1	0	6	6	0	6	0	0
KILLER WHALE	4	3	1	11	10	0	0	10	0
LONG-FINNED PILOT WHALE	1	0	1	2	2	0	0	0	2
MELON-HEADED WHALE, ELECTRA	3	3	0	49	49	0	47	2	0
PACIFIC WHITE-SIDED DOLPHIN	4	3	1	17	17	0	8	26	6
PYGMY KILLER WHALE	3	3	0	49	49	0	49	0	0
RISSO'S DOLPHIN, GRAMPUS	4	2	2	78	78	0	70	1	7
ROUGH-TOOTHED DOLPHIN	5	4	1	79	79	2	77	6	2
SHORT-FINNED PILOT WHALE	10	8	2	93	92	3	78	16	3
SPINNER DOLPHIN	4	3	1	2,956	2,950	3	2,782	875	10
SPOTTED DOLPHIN	3	2	1	4,935	4,935	0	4,678	2,302	10
STRIPED DOLPHIN, STREAKER	1	1	0	100	100	0	100	78	0
UNSPECIFIED CETACEANS	4	3	1	383	383	0	348	1	35
WHITE WHALE, BELUKHA	7	3	4	45	45	1	15	19	12
WHITE-BEAKED DOLPHIN	1	0	1	2	2	0	0	0	2
TOTAL NUMBER OF ANIMALS:				9,567	9,538	35	8,598	3,963	195

(1) ANIMALS TAKEN INCLUDE THOSE INADVERTENTLY KILLED DURING THE COURSE OF RESEARCH AUTHORIZING TYPES OF TAKE OTHER THAN PERMANENT REMOVAL.

TABLE 10
SUMMARY OF PERMITS FOR PERMANENT REMOVAL FROM THE WILD - PINNIPEDS
AS OF MARCH 31, 1982

SPECIES	******** PERMITS ********			********** NUMBER OF ANIMALS **********					
	ISSUED	EXPIRED	CURRENT	REQUESTED	AUTHORIZED	REPLACEMENTS	AUTHORIZATION EXPIRED	TAKEN (1)	TAKE REMAINING
ARCTOCEPHALINE FUR SEALS	1	1	0	2	2	0	2	0	0
BAIKAL SEAL	1	1	0	4	4	0	0	4	0
BEARDED SEAL	7	5	2	630	630	0	163	167	300
CALIFORNIA SEA LION	73	70	3	1,019	1,005	13	124	279	630
CASPIAN SEAL	1	1	0	2	2	0	2	0	0
CRABEATER SEAL	5	3	2	3,288	3,288	0	177	11	3,100
GRAY SEAL	3	3	0	24	24	0	11	13	0
HARBOR SEALS	32	28	4	1,586	1,557	0	502	755	306
HARP SEAL, GREENLAND SEAL	1	1	0	40	40	0	20	20	0
KERGUELEN FUR SEAL	3	1	2	151	151	0	6	0	145
LARGHA SEAL, SPOTTED SEAL	6	4	2	820	826	0	134	103	600
LEOPARD SEAL	7	4	3	696	696	0	38	56	602
NORTHERN ELEPHANT SEAL	3	1	2	160	160	0	3	22	136
NORTHERN FUR SEAL	2	1	1	20	20	0	0	10	10
NORTHERN SEA LION, STELLER SEA LION	7	4	3	780	780	0	116	306	358
RIBBON SEAL	7	5	2	630	630	0	266	64	300
RINGED SEAL	9	6	3	1,318	1,318	0	476	267	575
ROSS SEAL	6	4	2	289	289	0	28	1	260
SOUTH AMERICAN SEA LION	3	3	0	12	12	0	4	8	0
SOUTHERN ELEPHANT SEAL	4	2	2	153	153	0	8	0	145
UNSPECIFIED MARINE MAMMALS	1	1	0	0	15	0	11	4	0
UNSPECIFIED PINNIPEDS	2	1	1	12	32	3	15	0	20
WALRUS	1	1	0	200	200	0	20	180	0
WEDDELL SEAL	8	5	3	671	671	0	73	60	538
TOTAL NUMBER OF ANIMALS:				12,507	12,505	16	2,199	2,330	8,025

(1) ANIMALS TAKEN INCLUDE THOSE INADVERTENTLY KILLED DURING THE COURSE OF RESEARCH AUTHORIZING TYPES OF TAKE OTHER THAN PERMANENT REMOVAL.

TABLE 11 – IWC COMMERCIAL CATCH LIMITS, 1973-1981 [1/]

	25th Meeting (1973)	26th Meeting (1974)	27th Meeting (1975)	28th Meeting (1976)	29th Meeting (1977)	30th Meeting (1978)	31th Meeting (1979)	32th Meeting (1980)	33rd Meeting (1981)
Southern Hemisphere									
Fin	1,450 2/	1,000 2/	220 2/	0	0	0	0	0	0
Minke	5,000 2/	7,000 2/	6,810	8,900	5,690	6,221	8,102	7,072	8,102
Sei	4,500 2/	4,000 2/	2,230	1,863	771	0	0	0	0
Sperm (male)	8,000	8,000	5,870	3,894	4,538	3,820	} 580	} 300	0
(female)	5,000	5,000	4,870	697	1,370	1,055			
Bryde's	0	0	0	0	0	0	264	886 3/	866 3/
North Pacific									
Fin	550	300	0	0	0	0	0	0	0
Minke	.....	.....	.....	541	400	400	1,361	1,361	1,361
Sei and Bryde's	3,000	2,000							
Sei	.....	.....	0	0	0	0	0	0	0
Bryde's	.....	.....	1,363	1,000	524	454	479	529	526
Sperm (male)	6,000	6,000	5,200	4,320	5,105	3,800	1,350	890	0
(female)	4,000	4,000	3,100	2,880	1,339				
North Atlantic									
Fin	.....	.....	365	455	459	455	604	701	561
Minke	.....	.....	2,550	2,483	2,555	2,552	2,543	2,554	2,554
Sei	.....	.....	.....	132	84	84	100	100	100
Sperm	.....	.....	.....	685	685	685	273	130	0 4/
TOTAL COMMERCIAL QUOTAS	37,500	37,300	32,578	28,050	23,520	19,526	15,656	14,523	14,070
Other 5/	8,173	5,173	1,358						
TOTAL	45,673	42,473	33,936	28,050	23,520	19,526	15,656	14,523	14,070 6/ (13,448)

1/ Catch limits are for Antarctic whaling season (December of year of meeting through April of following year) and all coastal seasons of year after meeting. The Commission decided at the 32nd Meeting of apply quotas to coastal whaling seasons in the year in which they begin.

2/ Catch limit covering Antarctic catch only (South of 40 Latitude).

3/ Of this figure, 622 whales cannot be taken legally by member countries because of the factory ship moratorium and/or the Indian Ocean Sanctuary. The remainder of the 1982 catch limits, which is 244 animals from the Peruvian stock, in addition to 76 animals under the 1981 catch limit that were not taken may be taken between 1 November 1981 and 30 April 1982.

4/ Provided that the remainder of 130 male sperm whales from the 1981 coastal season may be taken during the 1982 coastal season.

5/ Whales taken by IWC nations, but not included in quotas.

6/ The figure in parentheses takes into account the reductions discussed in footnote 3 above. It may be noted that catch limits totalling 151 North Atlantic fin whales for 1982 are for stocks that have not been exploited since 1971. There are no indications that animals from these stocks (North Norway and Newfoundland-Labrador) will be taken in 1982.

TABLE 12 - POPULATION ESTIMATES
PINNIPEDIA[1/]

Name	Estimated World Total	Comparison of [2/] Population Data	Arctic Circumpolar	PACIFIC				ATLANTIC				SOUTHERN OCEAN			
				Asia	Alaska	North America	South America	North America	Europe	Africa	South America	New Zealand	Australia	Sub Antarctic	Antarctic
Order: Carnivora Suborder: Pinnipedia Family: Otariidae															
California sea Lions (Zalophus californianus)	110,000	complete				90,000	20,000								
Northern sea lion (Eumetopias jubatus)	232,000 to 262,600	complete		20,000 to 50,000	200,000	12,600									
South American sea lion (Otaria flavescens)	273,000	complete					228,000				45,000				
Australian sea lion (Neophoca cinerea)	2,000 to 3,000	complete											2,000 to 3,000		
Hooker's (New Zealand) sea Lion (Phocarctos hookeri)	6,000											6,000			
Alaska or Northern fur seal (Callorhinus ursinus)	1,838,000	best		585,000	1,250,000	3,000									
Guadalupe fur seal (Arctocephalus townsendi)	1,000	complete				1,000									
Juan Fernandez fur seal (Arctocephalus philippii)	705 to 750	complete					705 to 750								
Galapagos fur seal (Arctocephalus galapagoensis)	1,000 to 5,000	incom-plete					1,000 to 5,000								

[1/] All species of pinnipeds are included in the tables because of available data.

POPULATION ESTIMATES

PINNIPEDIA - Continued

Name	Estimated World Total	Comparison of Population Data	Arctic Circumpolar	PACIFIC				ATLANTIC				SOUTHERN OCEAN			
				Asia	Alaska	North America	South America	North America	Europe	Africa	South America	New Zealand	Australia	Sub Antarctic	Antarctic
Family: Otariidae															
South American fur seal (Arctocephalus australis)	346,000	incomplete					294,000				52,000				
Cape (South Africa) and Australian fur seal (Arctocephalus pusillus)	870,000	complete								850,000			20,000		
New Zealand fur seal (Arctocephalus forsteri)	58,000	complete										25,000		33,000	
Antarctic (Kerguelen) fur seal (Arctocephalus gazella)	350,000	complete												350,000	
Subantarctic fur seal (Arctocephalus tropicalis)	122,900	incomplete								113,000				9,900	

POPULATION ESTIMATES

PINNIPEDIA - Continued

Name Family: Phocidae	Estimated World Total	Comparison of Population Data	Arctic Circumpolar	PACIFIC				ATLANTIC				SOUTHERN OCEAN			
				Asia	Alaska	North America	South America	North America	Europe	Africa	South America	New Zealand	Australia	Sub Antarctic	Antarctic
Largha seal (Phoca largha)	335,000 to 450,000	incomplete		135,000 to 200,000	200,000 to 250,000										
Harbor (Common) seal (Phoca vitulina)	388,000 to 407,000	incomplete		10,000 to 15,000	260,000	42,000		28,000 to 38,000	48,000 to 51,000						
Ringed seal (Phoca [=pusa] hispida)	6 to 7 million	best	6,000,000 to 7,000,000												
Baikal seal (Phoca sibirica)	40,000 to 50,000	complete		40,000 to 50,000											
Caspian seal (Phoca caspica)	500,000 to 600,000	complete		500,000 to 600,000											
Harp seal (Phoca groenlandica)	1,300,000 to 2,300,000	complete						700,000 to 1.5 million	600,000 to 800,000						
Ribbon seal (Phoca [= histriophoca] fasciata)	200,000 to 250,000	complete	200,000 to 250,000												
Gray seal (Halichoerus grypus)	105,500 to 111,500	complete						17,500	88,000 to 94,000						
Bearded seal (Erignathus barbatus)	exceeds 500,000	incomplete		exceeds 500,000											
Hooded seal (Cystophora cristata)	500,000 to 600,000	complete							500,000 to 600,000						

POPULATION ESTIMATES

PINNIPEDIA - Continued

Name	Estimated World Total	Comparison of Population Data	Arctic Circumpolar	PACIFIC				ATLANTIC				SOUTHERN OCEAN			
				Asia	Alaska	North America	South America	North America	Europe	Africa	South America	New Zealand	Australia	Sub Antarctic	Antarctic
Family Phocidae															
Mediterranean monk seal															
Mediterranean monk seal (Monachus monachus)	500	best							500						
Caribbean monk seal (Monachus tropicalis)	extinct or near extinct	best						+3/							
Hawaiian monk seal (Monachus schauinslandi)	500 to 1,500	complete				500 to 1,500									
Southern elephant seal (Mirounga leonina)	600,000	complete									300,000			300,000	
Northern elephant seal (Mirounga angustirostris)	60,000	best				60,000									
Crabeater seal (Lobodon carcinophagus)	15,000,000	best													15,000,000
Ross seal (Ommatophoca rossii)	220,000	complete													220,000
Leopard seal (Hydrurga leptonyx)	500,000	complete													500,000
Weddell seal (Leptonychotes veddelli)	750,000	complete													750,000

2/ Best = the most comprehensive estimates throughout the range of the species.
Complete = good population estimates throughout the range of the species.
Incomplete = population estimates only in parts of the range of the species.

3/ + = A population occurs in this area in addition to numbers estimated from other regions. The numbers are either unknown or the data are not available.

TABLE 13 - POPULATION ESTIMATES
CETACEA

Name	Estimated World Total	1/ Comparison of Population Data	Arctic Circumpolar	PACIFIC				ATLANTIC				SOUTHERN OCEAN			
				Asia	Alaska	North America	South America	North America	Europe	Africa	South America	New Zealand	Australia	Sub Antarctic	Antarctic
Suborder: Mysticeti Family: Eschrichtiidae															
Gray whale (Eschrichtius robustus)	16,000	best			16,000										
Family: Balaenopteridae															
Minke whale (Balaenoptera acutorostrata)	370,000	incomplete		+ 2/	+	+		+	120,000					250,000	
Sei whale (Balaenoptera borealis)	210,000	incomplete		18,000	+	+	+	+	+	+	+		192,000		
Bryde's whale (Balaenoptera edeni)	24,000	incomplete		16,000		+	8,000	+		+	+	+	+		
Fin whale (Balaenoptera physalus)	217,000 to 220.300	complete			34,000			3,600 to 6,300	20,000				169,000		
Blue whale (Balaenoptera musculus)	11,200	complete			1,700			500	+	+	+		9,000		
Humpback whale (Megaptera novaeangliae)	5,700 to 6,800	incomplete			1,000			1,200 to 2,300	1,000		+		2,500		
Family: Balaenidae															
Right whale (Balaena glacialis)	3,620	complete			220			200		+	+		3,200		
Bowhead whale (Balaena mysticetus)	2,200	complete	+		2,200										

POPULATION ESTIMATES
CETACEA - Continued

Name	Estimated World Total	Comparison of Population Data	Arctic Circumpolar	PACIFIC				ATLANTIC				SOUTHERN OCEAN			
				Asia	Alaska	North America	South America	North America	Europe	Africa	South America	New Zealand	Australia	Sub Antarctic	Antarctic
Family: Delphinidae															
Atlantic white-sided dolphin (Lagenorhynchus acutus)	no data	incomplete						24,000	+						
Pacific white-sided dolphin (Lagenorhynchus obliquidens)	no data	incomplete		+	30,000 to 50,000										
Northern right whale dolphin (Lissodelphis borealis)	no data	incomplete		+	+	+									
Southern right whale dolphin (Lissodelphis borealis)	no data	incomplete										+	+	+	
Risso's dolphin (Grampus griseus)	no data	incomplete		+	+	+	+	10,000	+	+	+				
Melon-headed whale (Peponocephala electra)	no data	incomplete				+	+								
Pygmy killer whale (Feresa attenuata)	no data	incomplete				+	+	+	+	+	+	+			
False killer whale (Pseudorca crassidens)	no data	incomplete		+		+	+	+	+	+	+	+	+		
Long-finned pilot whale (Globicephala melaena)	no data	incomplete						+	+						
Short-finned pilot whale (Globicephala macrorhynchus)	no data	incomplete				+	+	+	+	+	+				
Killer whale (Orcinus orca)	no data	incomplete	+	+	+	+	+	+	+	+	+	+	+	+	+

POPULATION ESTIMATES
CETACEA - Continued

Name	Estimated World Total	Comparison of Population Data	Arctic Circumpolar	PACIFIC				ATLANTIC				SOUTHERN OCEAN			
				Asia	Alaska	North America	South America	North America	Europe	Africa	South America	New Zealand	Australia	Sub Antarctic	Antarctic
Suborder: Odonotoceti Family: Delphinidae															
Rough-toothed dolphin (Steno bredanensis)	no data	incomplete				+	+	+		+	+				
Bottlenose dolphin (Tursiops truncatus)	no data	incomplete		+		+	+	3,000 to 10,000	+	+	+				
Spinner dolphin (Stenella longirostris)	no data	incomplete		+		900,000		+		+	+				
Spotted dolphin (Stenella attenuata)	no data	incomplete		+		2.2 million									
Atlantic spotted dolphin (Stenella plagiodon)	no data	incomplete						+	+	+	+				
Striped dolphin (Stenella coeruleoalba)	no data	incomplete		+		2.3 million		+							
Common dolphin (Delphinus delphis)	no data	incomplete		+		900,000		17,500	+	+	+	+	+	+	
Fraser's dolphin (Lagenorhynchus hosei)	no data	incomplete				+				+	+				

POPULATION ESTIMATES
CETACEA - Continued

Name	Estimated World Total	Comparison of Population Data	Arctic Circumpolar	PACIFIC				ATLANTIC				SOUTHERN OCEAN			
				Asia	Alaska	North America	South America	North America	Europe	Africa	South America	New Zealand	Australia	Sub Antarctic	Antarctic
Family: Phocoenidae															
Harbor porpoise (Phocoena phocoena)	no data	incomplete		+	+	+		2,900	+						
Dall's porpoise (Phocoenoides dalli)	920,000	complete			920,000										
Family : Monodontidae															
Beluga, belukha, white whale (Delphinapterus leucas)	62,000 to 88,000	complete	62,000 to 88,000												
Narwhal (Monodon monoceros)	10,000	incomplete	+	+	+	10,000		+	+						
Family: Physeteridae															
Sperm whale (Physeter catodon)	732,000	complete			300,000			22,000		+	+			410,000	
Pygmy sperm whale (Kogia breviceps)	no data	incomplete		+		+	+	+		+	+				
Dwarf sperm whale (Kogia simus)	no data	incomplete		+		+	+	+		+	+				
Family: Ziphiidae															
Baird's beaked whale (Berardius bairdii)				+	+	+						+	+	+	

1/ Best = the most comprehensive estimates throughout the range of the species.
Complete = good population estimates throughout the range of the species.
Incomplete = population estimates only in parts of the range of the species.

2/ + = A population occurs in this area in addition to numbers estimated from other regions. The numbers are either unknown or the data are not available.

Appendix B

Laws and Treaties Governing the Protection of Marine Mammals

Every marine mammal of U.S. concern is protected by one or more U.S. laws or acts, and the conservation of some species is partially assured by international treaty or law. A summary of laws, conventions, and commissions designed to protect marine mammals follows.

United States Laws and Treaties

1. Marine Mammal Protection Act of 1972: A U.S. Federal Law that prohibits persons under the jurisdiction of the United States from taking, harassing, or importing any marine mammal or its byproducts into the United States, except when authorized to do so by special permit. Certain natives of Alaska may take marine mammals for subsistence use. (See introduction for a complete description of this Act).

2. Endangered Species Act of 1973: This U.S. Federal law provides a program for the conservation of species that are either endangered now or threatened with extinction within the foreseeable future and their dependent ecosystems, and to implement international conservation conventions. With limited exceptions, the Act prohibits the taking, importing, exporting, and interstate commerce of any endangered species, as well as their parts or products. Exceptions include permits for scientific purposes or the enhancement of propagation or survival of the species, economic hardship exemptions, and subsistence taking by Alaska natives. For threatened species, the Act authorizes the issuance of protective regulations as necessary for their conservation. To accomplish its purposes, the Act authorizes the acquisition of land; authorizes cooperative agreements with States which have an adequate conservation program, including Federal funding of up to two-thirds (or three-fourths when entered with more than one State); prohibits Federal agencies from taking any action that would jeopardize the continued existence of an endangered or threatened species or result in the destruction or modification of its critical habitat unless an exception is granted by the Endangered Species Committee; requires the development of recovery plans; and provides for civil and criminal penalties.

Marine mammals under the jurisdiction of NMFS and listed as endangered species are the blue whale, bowhead whale, fin whale, gray whale, humpback whale, right whale, sei whale, sperm whale, Caribbean monk seal, Hawaiian monk seal, and Mediterranean monk seal.

3. Convention on International Trade in Endangered Species of Wild Fauna and Flora: The Convention, which entered into force on July 1, 1975, provides additional protection for the following marine mammals under the jurisdiction of NMFS: Appendix I--blue whale, bowhead whale, gray whale, humpback whale, right whale, certain stocks of fin and sei whales, Ganges River dolphin, humpbacked dolphin, Indus River dolphin, white flag dolphin, finless porpoise, cochito (porpoise), Caribbean monk seal, Hawaiian monk seal, Mediterranean monk seal, and northern elephant seal; Appendix II--certain stocks of fin and sei whales, all other cetaceans, and the southern elephant seal, Amsterdam Island fur seal, Kerguelen fur seal, New Zealand fur seal, Southern (South American) fur seal, and South African fur seal. Trade is more strictly controlled for Appendix I animals than for Appendix II animals. The U.S. Management Authority for the Convention (U.S. Department of the Interior) controls the import, export, re-export, and introduction from the sea of convention animals through a system of permits and enforcement. Implementation by regulating commerce began May 23, 1977.

4. International Whaling Commission: The IWC was established under a convention signed in Washington, D.C., in December 1946. The membership includes all countries that catch significant numbers of whales except Portugal. The IWC is responsible for whale conservation worldwide. In recent years, the IWC has acted to bring world whaling under control by prohibiting the taking of some species, sharply reducing the authorized catches of species in certain areas, establishing catch quotas by stocks, and implementing an international observer plan for checking compliance with quotas and regulations at land stations and on factoryships. The IWC now regulates the harvest of Bryde's, fin, minke, sei, and sperm whales. The blue, bowhead, gray, humpback, and right whales are completely protected, except for some hunting by aborigines.

5. Whaling Convention Act of 1949: This Act brought into force the International Convention for the Regulation of Whaling signed on December 2, 1946, by the United States and certain other governments. Article III of the International Convention established the IWC.

6. Interim Convention on North Pacific Fur Seals: The convention, ratified in 1957, prohibits most citizens of Canada, Japan, the U.S.S.R., and United States from taking northern fur seals. The exceptions are aboriginal Eskimos, Aleuts, and Indians, who may take them only at sea and by primitive methods. The convention also provides for intensive research on this species by the four countries. The United States and U.S.S.R. commercially harvest northern fur seals on their breeding grounds and regulate the kills on a scientific basis. The Interim Convention has been extended until 1984.

7. Fur Seal Act of 1966: This Act brought into force the Interim Convention on North Pacific Fur Seals.

8. International Convention for the Conservation of Antarctic Seals 1977: The purpose of this convention is to safeguard all species of Antarctic seals and to ensure that, it commercial sealing begins on floating ice of the Southern Ocean, the taking of any species will be subject to strict limitations to prevent overexploitation or damage to their ecosystem. Measures adopted under the Antarctic Treaty of 1959 provide only for the protection of seals and other animals around the shoreline of the Antarctic Continent, but not on floating ice. The convention of 1972 may be applicable to crabeater, leopard, Ross, southern elephant, southern fur seals, and Weddell seals south of latitude 60° south. The Ross, southern elephant, and southern fur seals are protected species, and no taking is permitted.

Miscellaneous Regulations and Agreements of U.S. Interest

1. International Convention for the Northwest Atlantic Fisheries: Under terms of a convention signed in 1949, ICNAF is responsible for the investigation, protection, and conservation of the fisheries of the Northwest Atlantic. On January 1, 1977, Canada extended its jurisdiction over fisheries to 200 miles. To avoid conflicts in 1977 between Canadian and international regulations, Canada agreed to adopt ICNAF regulations for the 1978 harvest of harp seals and hooded seals.

An amendment to the ICNAF Convention adopted in December 1978 allows the Commission to give scientific advice for management of fisheries within natural fishery limits if requested by a coastal state that is a party to the Convention.

Canada appears to have completed the transition from international to Canadian management of harp and hooded seals within the limits of Canadian fisheries jurisdiction. The United States withdrew from the ICNAF in December 1976 to conform with provisions in the Magnuson Fishery Conservation and Management Act.

2. Canadian Norwegian Agreement on Sealing: On December 22, 1971, these two governments ratified an agreement on sealing and the conservation of seal stocks in the Northwest Atlantic. The agreement applies to the harp seal, but provision is made for extension to hooded and bearded seals and to the walrus.

3. Harp Seal: The U.S.S.R. and Norway signed an agreement in 1958 entitled "Preservation of Seals in the Greenland Sea." The agreement provides for the regulation of harp seal catches by these two nations. The U.S.S.R., however, has not hunted harp seals since 1965.

4. Gray Seal: The U.S.S.R. has prohibited (since 1970) the hunting of gray seals for sport and by amateurs, but permits the taking of these animals for subsistence. Canada uses an 1886 law for authority in regulating the take of gray seals. England has prohibited the hunting of gray seals on the Farne Islands since 1932 and on Orkney Island since 1923. Norway has forbidden hunting at Sor Trondelag since 1923. Finland and Sweden offer bonuses for gray seals taken.

5. Hooded Seal: Canada and Norway prohibit the taking of hooded seals near Newfoundland before March 10, near Jan Mayen Island before March 13, in Denmark Strait from June 15 to July 15, and in northern waters from March 20 to May 5. The U.S.S.R. and Norway in 1958 agreed to prohibit the harvest of hooded seals near Jan Mayen Island before March 13 and banned hunting in Denmark Strait.

47 FR 51 (March 16, 1982) - Notice of determination of nations in conformance with U.S. regulations regarding the protection of porpoises. This determination allows these nations to export yellowfin tuna to the United States.

3. Non-intentional take of "small numbers" of marine mammals (other than commercial fishing)

46 FR 224 (November 20, 1981) - Request for information and advance notice of proposed rulemaking to take small numbers of non-depleted marine mammals.

47 FR 42 (March 3, 1982) - Proposed rule - Regulations governing small take of marine mammals incidental to specified activities.

4. Whales

47 FR 16 (January 25, 1982) - Notice of interagency meetings in preparation for the annual meeting of the International Whaling Commission.

47 FR 18 (January 27, 1982) - Final rule on amendments to schedule of the International Convention for Regulation of Whaling

Appendix C

Notices and Regulations

Final rules and regulations are reprinted each year in the Code of Federal Regulations (CFR). Copies of the following rules, regulations, and notices published in the Federal Register are available from the Office of Marine Mammals and Endangered Species, National Marine Fisheries Service, U.S. Department of Commerce, Washington, D.C. 20235. The following list does not include FR Notices for scientific research and public display permits:

1. Tanner and agents for native handicrafts
46 FR 71 (April 14, 1981) - Notice of Reissuance of Certificates of Registration to Active Tanners or Agents or Cancellation of Inactive Agents or Tanners Certificates.

2. Incidental take of marine mammals
46 FR 86 (May 5, 1981) - Notice of availability of recommended decision concerning the application of the Federation of Japan Salmon Fisheries Cooperative Association for a general permit under the MMPA.

46 FR 94 (May 15, 1981) - Rules and regulations - Final decision, issuance of permit and final rule governing the taking of marine mammals incidental to Japanese high seas salmon fishing in the North Pacific Ocean and in the U.S. Fishery Conservation Zone.

46 FR 95 (May 18, 1981) - Notice of issuance of a general permit to the Republic of Korea to incidentally take marine mammals.

46 FR 160 (August 19, 1981) - Rules and Regulations - Final rules governing the taking and importing of porpoise incidental to commercial tuna purse-seine fishing in the eastern tropical Pacific ocean.

46 FR 220 (November 16, 1981) - Notice of receipt of application from Poland for a general permit to take marine mammals incidental to commercial fishing operations.

47 FR 5 (January 8, 1982) - Notice of issuance of general permits to Japan Deep Sea Trawlers Association to take marine mammals incidental to commercial fishing operations.

47 FR 34 (February 18, 1982) - Notice of issuance of general permit to vessels registered to West Germany and Bulgaria to take marine mammals incidental to commercial fishing operations.

47 FR 46 (March 9, 1982) - Notice of issuance of general permit to the Republic of Korea to take marine mammals incidental to commercial fishing operations.

Northern fur seal bull
Castle Rock, San Miguel Island, California

Photo by Dana J. Seagars, NMFS,